BEHAVIOR AND REASONS BEHIND ANTI-OBESITY DRUG USAGE AMONG NON - OBESE FEMALE ADOLESCENTS IN BANGKOK

Mr. Apichai Pojlertaroon

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จุฬาลงกรณ์มหาวิทยาลัย

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สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

4576855433 : MAJOR SOCIAL AND ADMINISTRATIVE PHARMACY

BEHAVIOR/ REASON/ ANTI-OBESITY DRUG USAGE/ FEMALE ADOLESCENT/ BODY IMAGE

APICHAI POJLERTAROON: BEHAVIOR AND REASONS BEHIND ANTI-OBESITY DRUG USAGE AMONG NON-OBESE FEMALE ADOLESCENTS IN BANGKOK. THESIS ADVISOR: NIYADA KIATYING-ANGSULEE, PHD., 166 pp.

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Anti-obesity drug usage is increasing. Non-obese female adolescent is one risk group that uses method indication. Yet, no study has addressed the behavior and reasons behind anti-obesity drug usage among non-obese female adolescents in Bangkok. The purposes of this study were to investigate behavior, to identify the reasons behind, and to explore the perceived consequence of anti-obesity drug usage. This study was a cross-sectional study based on qualitative method. Samples of the study included 30 female adolescents who had body mass index values less than 30, were currently using anti-obesity drug, or ever used anti-obesity drug, and received service from clinic or hospital in Bangkok.

The study showed that the purpose of anti-obesity drug usage was inconsistent with medical treatment, rather for beauty than health concern. All doctors prescribed anti-obesity drug in the group of psychotropic substance combined with other drugs to increase the efficacy. Female adolescents knew many details about anti-obesity drug from their closed friends who succeeded in controlling weight. They strictly obeyed doctors' advices because they wanted to be success and were afraid of the side effect. Heart palpitation and annoyance were the most two side effects often found. The main reasons to make female adolescents used anti-obesity drug came from internal and external factors. The internal factor was that they did not satisfy with their body image and external factor was come from teasing from friends and media. Most of female adolescents satisfied with drug efficacy especially fast action. In addition they also satisfied with drug cost. Although most of them encountered with a lot of side effects but they still used anti-obesity drug through their courses because they could not change the perception toward their demand for beauty. The association between Thai FDA, the Medical Council of Thailand, doctors, and parents are necessary to look after anti-obesity drug usage among non-obese female adolescents.

Department Social And Administrative.......... Pharmacy Student's signature......................................

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อภิชัย พจน์เลิศอรุณ: พฤติกรรม และเหตุผลของการใช้ยาลดความอ้วนในกลุ่มวัยรุ่นเพศหญิงที่ไม่อ้วน ในเขตกรุงเทพมหานคร. (BEHAVIOR AND REASONS BEHIND ANTI-OBESITY DRUG USAGE AMONG NON - OBESE FEMALE ADOLESCENTS IN BANGKOK) อ. ที่ปรึกษา ผู้ช่วยศาสตราจารย์ ดร.นิยดา เกียรติยิ่งอังศุลี: จำนวนหน้า 166 หน้า. ISBN 974-17-5871-5.

ในปัจจุบันมีการนำยาลดความอ้วนมาใช้เพิ่มขึ้น พบว่าวัยรุ่นหญิงที่ไม่อ้วนเป็นกลุ่มเสี่ยงกลุ่มหนึ่งในการใช้ยาลดความอ้วน ในปัจจุบันยังไม่มีการศึกษาถึงพฤติกรรม และเหตุผลของการใช้ยาลดความอ้วนในกลุ่มวัยรุ่นหญิงที่ไม่อ้วนในเขตกรุงเทพมหานคร การศึกษานี้มีวัตถุประสงค์เพื่อศึกษาพฤติกรรมการใช้ยาลดความอ้วน, ศึกษาเหตุผลของการใช้ยาลดความอ้วน และ ศึกษาการรับรู้ผลของการใช้ยาลดความอ้วน การศึกษานี้เป็นการวิจัยเชิงคุณภาพ แบบตัดขวาง ศึกษาในกลุ่มวัยรุ่นหญิงจำนวน 30 คน ที่มีค่าดัชนีมวลกาย น้อยกว่า 30 กำลังใช้ยาลดความอ้วนในปัจจุบัน หรือเคยใช้ยาลดความอ้วนจากคลินิก หรือโรงพยาบาล ผลการศึกษาพบว่าวัตถุประสงค์ของการใช้ยาลดความอ้วนไม่สอดคล้องกับวัตถุประสงค์การรักษาของแพทย์ วัยรุ่นหญิงที่ไม่อ้วนมีการใช้ยาลดความอ้วนเพื่อความสวยงามมากกว่าเพื่อสุขภาพ แพทย์ทั้งหมดมีการสั่งจ่ายยาลดความอ้วนในลักษณะร่วมกัน คือ ยาในกลุ่มวัตถุออกฤทธิ์ต่อจิต และประสาทประเภท 2 ร่วมกับ ยาในกลุ่มอื่นๆ เพื่อเพิ่มประสิทธิผลในการลดน้ำหนัก วัยรุ่นหญิงจะมีการรับรู้รายละเอียดเกี่ยวกับยาลดความอ้วนจากเพื่อนสนิทของตนที่ประสบความสำเร็จจากการใช้ยา วัยรุ่นหญิงมีความเคร่งครัดในการใช้ยาลดความอ้วนเนื่องจากต้องการให้สามารถลดน้ำหนักได้ตามต้องการ และกลัวอันตรายจากผลข้างเคียงของยา ผลข้างเคียงที่พบมากที่สุดคือ อาการใจสั่น และหงุดหงิด ในส่วนของเหตุผลการใช้ยาลดความอ้วนนั้นพบว่าสาเหตุการใช้ยาลดความอ้วนในกลุ่มวัยรุ่นหญิงเกิดจาก 2 ปัจจัยหลัก คือ ปัจจัยภายใน และปัจจัยภายนอก ปัจจัยภายใน ได้แก่ ความไม่พอใจในภาพลักษณ์ปัจจุบันของตัวเอง ปัจจัยภายนอกเกิดจากการล้อเลียนจากกลุ่มเพื่อน หรือจากสื่อต่างๆ วัยรุ่นหญิงส่วนใหญ่พอใจในประสิทธิผลของยาลดความอ้วนโดยเฉพาะความรวดเร็วในการลดน้ำหนัก นอกจากนั้นยังมีความพอใจในราคายาลดความอ้วนที่รักษาด้วย วัยรุ่นหญิงส่วนใหญ่ได้รับผลข้างเคียงจากการใช้ยาลดความอ้วนแต่ก็ยอมทนต่อผลข้างเคียงของยาตลอดช่วงการรักษา เนื่องจากไม่สามารถลบล้างความคิดที่มีต่อรูปร่างที่ตัวเองปรารถนาได้ การร่วมมือกันระหว่างหน่วยงานที่เกี่ยวข้องได้แก่ สำนักงานคณะกรรมการอาหารและยา แพทยสภา แพทย์ และ พ่อ แม่ มีความจำเป็น เพื่อที่จะดูแลการใช้ยาลดความอ้วนในกลุ่มวัยรุ่นหญิงที่ไม่อ้วนเหล่านี้ได้

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Apichai Pojlertaroon

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LIST OF ABBREVIATIONS

ACS	The prospective American Cancer Society
B.E	Buddhists Era
BMI	Body Mass Index
cm	Centimeter
CNS	Central Nervous System
CVD	Cardio Vascular Disease
EAT	Eating Attitude Test
GI disturbance	Gastrointestinal disturbance
HBM	Health Belief Model
HCTZ	Hydrochlorothiazide
kg	Kilogram
LDL	Low Density Lipoprotein
m	Meter
mg	Milligram
PPH	Pulmonary Hypertension
Thai FDA	Thai Food Drug and Administration
The INDEX	The International Dexfenfluramine study
TRA	The Theory of Reasoned Action
TV	Television
UK	United Kingdom
US	United State of America
US FDA	United State of America Food and Drug Administration
WHO	The World Health Organization
WHR	Waist–to-Hip Ratio

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CHAPTER I

INTRODUCTION

1.1 Rationale and Statement of the Problem

When people perceived that they were fat or obese, they would find the ways to reduce their weight. The popular methods that the people used to reduce their weight were fasting, physical exercise and pharmacotherapy (Panpreecha, 1997; Chanmanee, 1994). At present, Thai population spends up to 1.2 billion Baht per year on dietary products, with recent annual growth is as high as 20%, despite the economic crisis.

Pharmacotherapy for obesity increased nowadays in Thailand. Anti-obesity drugs or weight loss drugs are substances intended to promote weight loss. Anti-obesity drug may be psychotropic substance schedule 2 that must receive approval from Thai FDA before being administered, or other drugs, such as thyroid hormone, laxative, and diuretic agent. Furthermore, dietary supplements and herbal preparation are often used to treatment obesity in Thailand.

In Thailand, prescription anti – obesity drugs of varying uses are psychotropic substance schedule 2 (Thai FDA, 2002). From the data of Narcotic Control Division, Thai Food and Drug Administration concluded that the import of prescription anti – obesity drugs increased since 1993.

Presently, there are two main types of prescription anti – obesity drugs: adrenergic agonist and serotonergic agonist (Pi-Sunyer, 1992; Regional drug and therapeutic center, 1999)

1. Adrenergic agonist: Such as amfepramone, phentermine, mazindol, and cathine. This group of drugs is effective on stimulating central nervous system (CNS) and sympathetic nervous system.

2. Serotonergic agonist: Such as fenfluramine and dexfenfluramine. Both of them were withdrawn from the Thai market in 2000 because of cardio-vascular side effect such as cardiac valve lesions (Thai FDA, 2002)

At present, adrenergic agonist is the major group that is popularly used in Thailand (Thai FDA, 2002).

Other drugs that are popularly used to reduce weight in Thailand are shown below;

1. Thermo: Such as thyroid hormone, thyroxin
2. Laxative: Such as bisacodyl, Senna
3. Diuretic agent: Such as hydrochlorothiazide (HCTZ), furosemide
4. Hypnotic agent / Anxiolytic agent: Such as diazepam
5. Dietary supplements and herbal preparations

Currently, the problems of anti-obesity drug usage increase especially in anti-obesity drug prescribing and behavior of anti-obesity drug usage. In doctors' prescribing, non-prescription anti-obesity drugs are frequently prescribed in combination with prescription anti-obesity drugs to speed up weight loss. Some of drug prescriptions, the doctors prescribed anti-obesity drugs up to six different substances. At present, there is no strictly measures to control about these prescriptions. Thai FDA just controls the amount of drugs so drug abuse and drug misuse will occur in the patients. In addition, the number of anti-obesity drug import also increases every year, with increasing amount of private clinics and hospitals that have the license of psychotropic substance

schedule 2. It shows that the amount of anti-obesity drug usage also increases (Thai FDA, 2002).

In prescription anti-obesity drug, group of adrenergic agonist is categorized in the group of psychotropic substance schedule 2 (Thai FDA, 2002). Psychotropic substance schedule 2, such as phentermine is the most frequently used in Thailand, 31 percent (Thai FDA, 2002). In fact, anti – obesity drugs of psychotropic substance schedule 2 are strictly controlled by law, name psychotropic substance controlling act B.E 2518. No one can produce, sell, import, export, and posses anti – obesity drugs unless they have the licenses. Thai FDA is the only organization that has duty to import, sell, and distribute anti – obesity drugs to physicians, and only the physicians that have licenses can prescribe these drugs to the specific patients (Thai FDA, 2002). The anti – obesity drugs can reach patients only by physician's prescription and medical report of prescription will be sent to the Thai FDA each time. It seems that Thai FDA strictly control on drug usage but in fact the rate of anti - obesity drug usage still increases (Thai FDA, 2002). Because a lot of Thai female especially in the group of adolescence still used anti - obesity drugs to reduce their weights (Thai FDA, 2002). In addition, the data from Thai FDA also shows that most of Thai female adolescents who used anti-obesity drug to reduce their weight had normal weight level; they are not obese (Pacharapaisarn, 2002). The problem is similar to other countries. A study in Sao Paulo showed that three-fourths of the women aged 20 who wanted to lose weight took prescription anti-obesity drugs. These women intended to reduce their obesity although they were not obese (Jordan, 2001). In the same study, 86% reported that they had experienced side effects, but had not told their doctors about them because they were afraid that the doctors would revoke the prescription. This problem also occurs in Thailand especially in the group of female adolescences (Thai FDA, 2002). They have values to have the lean body like pencil - thin or super model. No report on the exactly amount of anti-obesity drug usage in this group (Thai FDA, 2002). At present, Thai

FDA restricted the supply of anti- obesity drugs to private clinic to control its misuse. The additional policy to restrict drug use followed the death of teenage students in Chiangmai and Ang Thong. They died from wrong treatment and side effect of the drugs (Thai FDA, 2002). Thai FDA declared that all private clinics must be registered in order to obtain drug no more than 5,000 units of each type of anti-obesity drug per month (Thai FDA, 2002).It should be noted that the prescribed drugs were not only from physicians and pharmacists but also from the black market where as distributed illegally (Thai FDA, 2002). It is not surprised that the rate of prescription anti - obesity drug usage increases. On the other hand, the regulation of non-prescription anti-obesity drug and weight loss supplement is less strict than prescription anti-obesity drug so the patients can access them easily.

There were only a few Thai research that concern with reducing weight method and anti - obesity drug. Chanmanee (1994) found that female respondents had significantly higher prevalence rates of using central nervous system (CNS) stimulant anti-obesity drug than male respondents and there was no relationship between age, body weight, educational status, occupation and the use of anti-obesity drug. Panpreecha (1997) studied about controlling system of the Ministry of Public Health in anti - obesity drug usage in health facilities and found that using of anti-obesity drug in the group of CNS stimulant increased day by day, furthermore, smuggling of the drugs from black market also increased. Patcharapisan (2002) studied about attitudes of Thai females received service from diet clinic, and concluded that 70% of women who attended the diet clinic were not overweight or fat, moreover, friends and lover were the important factors that influencing them to use anti-obesity drug.

There were some of international research that concern with obesity, reducing weight method and anti - obesity drug. Daniel (1998) studied behavior of dieting among young adolescents. In this study, it was found that younger adolescents trying to lose

weight engage in variety of problem dieting and weight loss behaviors by increasing the use of vomiting or laxative and prescription anti-obesity drug. Gordon-Larsen (2001) pointed out that physical activity, inactivity, and perception of ideal body size emerged as the most important contributory factors to obesity status. Blanck (2001) concluded that increasing rates of obesity, nonprescription product use is likely to increase especially in the group of young female adolescents. Barclay (2003) proposed that young women were the group of high risk for body dissatisfaction and societal pressure. These factors influenced them to think like this.

Almost all of this research was studied by the quantitative approach. To our knowledge, there was no published literature on behavior of anti-obesity drug usage among non-obese female adolescents in Bangkok using qualitative approach.

So the purposes of this study were to investigate behavior of anti-obesity drug usage, to identify the reasons behind anti-obesity drug usage, and to explore the perceived consequence of anti-obesity drug usage among non-obese female adolescents. The result of this study will show the real problems about anti - obesity drug usage in Thailand. Furthermore, it could be used as information for government measures to control these problems both at present and in future.

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1.2 Objectives

1) To investigate behavior of anti-obesity drug usage among non-obese female adolescents

2) To identify the reasons behind anti-obesity drug usage among non-obese female adolescents

3) To explore the perceived consequence of anti-obesity drug usage including drug efficacy, drug side effect, and drug satisfaction among non-obese female adolescents

1.3 Expected benefits

(1) The result will be used for improving and developing government measures to control and prevent anti- obesity drug problems that occur at present and will occur in the future.

(2) The result can also be used as baselines for future research especially improving weight control behavior.

CHAPTER II

LITERATURE REVIEW

The theories and studies related to this study are divided in 4 parts including obesity and anti- obesity drugs, health psychology theories including attitude toward body image, attitude toward social stigma of obesity, and attitude toward inferiority complex of obesity, the theories of drug use behavior, and conceptual framework of the study.

2.1 Obesity and anti-obesity drugs

2.1.1 Obesity

In the past, we regarded obesity merely as the condition of excess weight rather than being a kind of disease. According to medicinal society being overweight or fat is a kind of chronic disease (Atkinson, 2000; Silverstone, 1993).

The terms "obesity" and "overweight" do not contain the same meaning. Obesity refers to the condition that one's body has accumulated excess fat to the amount which is harmful to human health. It occurs when the body receives too much food than its energy exhausted, and thus, resulting in accumulation of fat in adipose tissue as dispersed in partial or all over the body. Overweight refers to a person having excess weight compared to height.

Most scientists in this field now believe that obesity is a combination of a genetic predisposition for obesity that is brought out by environmental factors (Tanphaichitr, 1996). Currently, it is not possible to manipulate the genes for obesity, but the environment certainly can be manipulated. (Martorell, 2001; Atkinson, 2000)

2.1.1.1 Diagnosis

To diagnose whether a person has an excess weight than normal or being obese, various measures to evaluate levels of the disease are as follows:

A. Body Mass Index (BMI)

It is the most popular measure being used. It is a measure of weight in relationship to height, weighted in kilogram. The measure's formula is:

$$\text{Body Mass Index} = \frac{\text{Weight (Kilogram)}}{\text{Height (Metre}^2\text{)}}$$

The BMI value has been interpreted in comparison with standard measured as bellows (WHO, 1998):

BMI (kilogram / metre^2)	nutrition conditions
< 20.0	body weight below standard
20.0 – 24.9	normal weight (18.5 – 24.9 in Thailand)
25.0 – 29.9	Overweight or Pre-obese
30.0 – 34.9	Obesity Grade 1
35.0 - 39.9	Obesity Grade 2
$\geq$ 40	Obesity Grade 3

B. Ideal body weight

To assess proper weight as compared to height. By reading the weight – height comparison table, one can tell the sizes of body structure whether to be small, medium or large.

C. Percent body fat measure

By measuring thickness of skin through skin fold calipers, body fat in women should not exceed 30% whereas those in men should not be more than 26%.

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D. Waist to hips ratio

By measuring waist and hips widths then compare these two in ratio. The outcomes are that waist to hips ratio should not be over 0.95 for men and 0.80 for women.

E. To assess by cellulite

Cellulite is the result from over accumulation of body fat. Over half of body fat will be accumulated under skin which in turn will push up the elastic tissue to appear as tiny nodules as chicken skin or orange peel.

2.1.1.2 Causes of obesity

A. Genetic factors If one's parent either father or mother being fat, their children will have the 40-50% of chance to be fat. If both fathers and mother are fat, there children will have the 70-80% of chance to be fat. However, if the parents are not fat, their children will take only 7% to be fat.

B. Environmental Factors

Familial Factors

Environmental factors of a familial nature, including ethnic food preferences, eating patterns, dietary composition differences (e.g., high-fat diets), and activity levels, play a role in the etiology of obesity.

Diet Composition and Eating Patterns

Excessive calorie intake above daily energy requirements is necessary for the development of obesity, but it is a mistake to assume that simple overeating is responsible for obesity. There is evidence that the quality of the foods ingested is also important in producing obesity. Diets high in fat produce a greater degree of obesity than those high in carbohydrates (CHO) and proteins (CHON).

Activity Levels

The level of daily physical activity clearly contributes to the maintenance of body weight. Obese people are less active than lean people.

Drugs

It is not well recognized, but numerous drugs may produce an increase in food intake or body weight. The most common category that produces weight gain is glucocorticoids. Insulin and oral hypoglycemic promote weight and adipose tissue gain in diabetics. Phenothiazines and certain tricyclic antidepressants, such as amitriptyline, may produce weight gain.

Stress

Several types of stress may contribute to obesity. Perhaps the most studied is emotional stress. Depression is associated with weight gain, so that 10-20% of depressed patients gain weight.

Central Nervous System Damage

Injury to selected areas of the central nervous system (CNS) from accidents or neoplasm's is known to cause obesity in a small number of patients. Probably the most common type of injury is head trauma from automobile accidents. Pituitary or hypothalamic tumors are the most common types of neoplasm's associated with the onset of obesity.

Infectious diseases

Finally, the most ominous potential etiology of obesity is that of infectious disease. Bray has reported on a very small number of patients who developed obesity after tuberculosis or other infections of the central nervous system.

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Endocrine and metabolic diseases

Endocrine disease is a commonly sought etiology of obesity but is rarely found. Thyroid disease is most often blamed for causing obesity, particularly in adolescents (Atkinson, 2000; Chanmanee, 1994; Tanphaichitr, 1996).

2.1.1.3 Harms from obesity

Obesity increases the risk of morbidity and motility. By morbidity is meant the onset and severity of disease associated with obesity and by mortality the death rate that can be directly attributed to obesity.

By morbidity, severity of diseases that associated with obesity such as:

A. Cardiovascular Disease

The prevalence of cardiovascular disease (CVD) is related significantly to the effect of hypertension and dyslipidemia, as well as to direct adverse effects on the heart.

B. Diabetes Mellitus

The reason for the increased incidence of diabetes with obesity is partly related to the insulin resistance created by the obese state.

C. Gall Bladder Disease

Both cross-sectional and longitudinal studies have shown that increasing body weight is associated with a greater incidence of gall bladder disease.

D. Respiratory Disease

As weight increase, more work is required just to move a heavier chest. Increase fat in the chest wall and abdomen reduces effective lung volume, alters, respiratory pattern, and causes a decreased compliance of the respiratory system.

E. Cancer

The prospective American Cancer Society (ACS) study previously mentioned, which followed over 750,000 men and women for 12 year, found that the mortality ratio for cancer for men who were 40% overweight was 1.33 and for women 1.55. Overweight men have significantly higher mortality ratios for colorectal and prostate cancers, and overweight women had significantly higher rates of endometrial, gall bladder, cervical, ovarian, and breast cancers.

F. Arthritis

Degenerative arthritis is a greater problem in obese than lean individuals.

G. Gout

There is a sexual dimorphism with regard to the relationship of overweight to gout. Women were not affected until they reached a BMI greater than 31. Correlation between level of uric acid and weight have been repeatedly reported

H. Psychiatric effects

Fat people generally lack self-confidence in their figure. If ones can not find appropriate resolution, their mental concerns might lead to turn per variations. Some cases might develop into mental disorder, or committing suicide.

Reduction in weight is necessary to prolong life, as well as preventing associated diseases. Methods to achieve these are:

- Dietary control
- Physical exercise

However, the ideally effective method is to do regular exercise couple with dietary control. In such case that the obese patient fails to satisfactorily control diets and exercises, where as gaining risky rates of excess weight, the doctor will recommend the co-application in anti- obesity drug (Thai FDA, 2002; Chanmanee, 1994; PI-Sunyer, 1993).

2.1.1.4 Behavior of reducing weight

There are many ways to reduce weight. In Thailand, the most three popular methods are dietary, physical exercise, and pharmacotherapy (Thai FDA, 2002). The data from Thai FDA shows that the behavior of reducing weight is change. Normally, deobesity is suitable for the people that are overweight (BMI values > 25) and obesity (BMI values > 30). Chanmanee (1994) revealed that sex or gender was the factor influencing behavior of reducing weight, female more than male. Patcharapisan (2002) studied about attitudes of Thai females received service from diet clinic. The result of this study revealed attitude toward body image, friends, family, lover, and mass medias influencing them to used the drugs.

In Thailand, the objectives of reducing weight are change especially in the group of adolescents. They lose their weight with values to gain slim figure that seems to be good shape as well as the modern garment made is so small that the one who does not often like exercise can wear it. Upon requirement of lessen weight, they turn up to the diet clinics where has been in service popularly.

At present, behavior of reducing weight is different in other countries. Story (1997) found that psychosocial and health-compromising behavior was associated with dieting and purging in adolescents. Rasheed (1998) studied about body image and weight control beliefs and practices among female college students. It was found that nearly half of them were practicing inappropriate methods such as; fasting (>24 hours) or induction of vomiting after eating. Ricciardelli (2000) study dietary restraint and negative affect as mediators of body dissatisfaction and bulimic behavior in adolescent girls and boys. It was found that sociocultural factor played the important role by affecting girl students to use bulimic methods reducing their weight. In China, anti-obesity drug have become increasingly popular. Gordon-Larsen (2001) showed that

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physical activity, inactivity, and perception of ideal body size emerged as the most important contributory factors to obesity status. In the other side, self esteem, health behavior knowledge, eating attitude, maturation status, macronutrient, and micronutrient status were not important factors correlating to obesity. Rasheed (2002) found that psychological factor especially attitude toward body image was more concerned with reducing weight than knowledge. Levin (2003) found that family income and education were the important factors that can affect depression and obesity in adolescents and influent them to lose weight. The problem is just beginning to grow in China where there are hundreds of weight of weight loss products especially a traditional herb laxative, dahuang, derived from the rhubarb plants. The pharmacology of this plant is similar to psychotropic substance. It is so bad that most foreign drug maker have abandoned the scene to the locals. Shifting from Asia to South America, Latin America has always been known for placing great emphasis on their appearance and glamour. The data showed that Brazilian women are taking prescription anti-obesity drugs by the thousands. This problem is similar to that in the U.S. A study in Sao Paulo showed that three-fourths of the women aged 20 years who want to reduce weight were taking prescription anti-obesity drug intended for the obese when they weren't obese. Moreover, 86% reported that they had experienced side effects, but had not told their doctors about them because they were afraid that the doctor would revoke the prescription. The main cause of this problem is that most of adolescent women willingly to use the drug in the hopes of remaining pencil-thin, not health reasons (Thai FDA, 2003).

We can conclude that the popular methods of reducing weight in Thailand and other countries are;

Dietary

Ones who look for decreasing of obesity should have basic knowledge of dietetics of Nutrition to have proper portion of nutrient and their behavior of eating should be verified as well.

Presently, some materials are used in reducing weight ; for example, glucomannan with polysaccharide extracted from caladium species, used for weight control and diabetes since it absorbs liquid with 200 times inflation that be able to fill up the space of stomach.

Furthermore, aspartame, the sweetening substance is also used for deobesity due to its quantity of 400 mg. can decrease 15% of each meal.

Physical Exercise

If practiced together with diet, it can better lessen w eight and make better physical strength.

Anti-obesity drug

Presently, anti-obesity drug that popularly used in Thailand are prescription anti-obesity drug and self-medicated anti-obesity drug.

Commercial weight - loss centers and diet clinics

At present, these methods are very popularly used to reducing weight in Thailand. They all charge an enrollment fee and on-going fees on top of that. You must weight in each week, pay for coaching from counselors and some require that you purchase low – calorie meals from the company.

Psychotherapy

It is one of better results among obese persons of stress. Psychological means to encourage weight control.

Acupuncture

Applied recently by Prof. Dr. Khunying Salard Tabwong, a lady Doctor who was

on a speech said, it can lessen weight but take too long time with less hundred percent result.

Surgery

It is one of highly risk methods that surgery made at intestine to decrease nutrient absorption that causes overweight. This high risk may be prescribed particularly on essential case.

2.1.1.5 The weight control method in medical aspect

In general term, the obese patient has to be adequately motivated to loss weight. The aims and prospective of the treatment should also be established in advance and fully explained to patients. The willingness to reach the theoretical 'ideal' weight will have to be discouraged; losing 30-50% of baseline overweight (in most case 15-30 kg) is a reasonable, 'desirable' and even ambitious goal. In most cases, a daily energy deficit of about 1,000 kcal is appropriate, and can guarantee a loss of 0.5-1 kg/week. Finally, the treatment should take into consideration the patient's needs but only to modify all environmental and dietary factors predisposing to excess body fat.

The following are safety treatment of obesity (Belfiore, 1992).

A. Diet

In most cases low-calorie diets with a daily energy intake of 900-1,500 kcal are prescribed with success. Less than 900 kcal is rarely needed, except for persons with very low physical activity. The recommended intake of vitamins and minerals is covered by vegetables and fruit, allow people to eat a large variety of food and may reduce social deprivation due to dieting.

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B. Physical exercise

There seems to be general agreement that the successful treatment of obesity should include physical exercise. Physical exercise increases energy expenditure, may increase appetite, improves cardiovascular function and decrease insulin resistance.

Finally, the maintenance of an active life style by regular exercise seems to be effective in obtaining o stable weight loss.

C. Behavior Therapy

This method is a safety method to reduce weight, however, entails some difficulties as it requires time, specific competence and experience. Therefore, although effective, especially when combined with other form of therapy, behavioral treatment tends to used more often in specialized clinics.

2.1.2 Anti-obesity drugs

In certain cases, pharmacological treatment may need to be considered in addition to diet, exercise and behavior modification. To date, there is little published scientific evidence reporting the long term safety and efficacy of currently available anti - obesity drug.

Pharmacotherapy should be part of a long - term management strategy for obesity that is specific to a given patient.

At present, there are two main types of anti - obesity drugs.

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2.1.2.1 Types of anti - obesity drug

Anti - obesity drug can be classified into two broad groups: drugs acting on the central nervous system to influence appetite and drugs acting on the gastrointestinal system to reduce absorption; as listed in Table 1 (Atkinson, 2000; Silverstone, 1993).

A. Drugs acting on the Central Nervous System

Adrenergic agonists: Such as amphetamine, phenmetrazine (These two kinds of drugs have been presently no more used), amfepramone, phentermine, mazindol, cathine. This group of drugs is amphetamine derivatives that are effective at suppressing - appetite thus reducing weight. Because of their stimulant action on the CNS, only short-term use, for 3 months or less is recommended.

At present, this group of drugs is categorized as psychotropic substance schedule 2 in Thailand.

Serotonergic agonists: Such as fenfluramine, dexfenfluramine and fluoxetin were effective weight reduction drugs but they have been withdrawn worldwide because of the lung - related complication of primary pulmonary hypertension and hypertropic cardiac valvular lesions.

Fluoxetin (Prozac^{R}), a serotonergic anti - depressant, has modest affected on appetite and weight, and can be used as a surrogate anoretic agent especially in depressed obese patients. The side effects most commonly reported by the patients were insomnia, drowsiness, and diarrhea; in depressed patients the most frequent side effect is nausea.

Fenfuramine - Phentermine (Fen-phen) refers to the off-label combination of the appetite suppressants fenfluramine and phentermine. Several studies have examined the effectiveness of long-term treatment with drug combinations (Thai FDA, 2002). Phentermine is a stimulant anorexiant, which appears to decrease appetite through noradrenergic and dopaminergic mechanisms and fenfluramine is a serotonin reuptake inhibitor. Thus, while one drug reduces appetite, the other enhances early satiety. When used in combination, a smaller dose of each can be effective, thus reducing adverse side effects. But nowadays Fen-phen was banned in the market because of heart valve problems. The US FDA took Fen-phen off the market in 1997.

Drug - acting as both adrenergic and serotonergic agonist: Such as sibutramine

Sibutramine (Meridia[R]), a novel norepinephrine and serotonin reuptake inhibitor, was approved in the US for obesity treatment in 1997. Sibutramine induced weight losses were accompanied by favorable reductions in plasma triglycerides, total cholesterol, low-density lipoproteins (LDL), and waist-to-hip ratio (WHR). Currently, there is a number of health risks associated with sibutramine. It has been banned in Italy and being reviewed by authorities in France and UK where there have been more than 100 serious adverse reactions and two deaths.

B. Drugs acting on the gastrointestinal system: Such as orlistat

Orlistat (Xenical[R]) is a pancreatic lipase inhibitor which produces a dose dependent reduction in dietary fat absorption. The US FDA licensed this new drug in 1999. Orlistat inhibits pancreatic and gastric lipase, thus decreasing ingested triglyceride hydrolysis. It produces a dose dependent reduction of ingested triglyceride hydrolysis. This action leads to weight loss in obese subjects. One possible adverse effect of orlistat is the malabsorption of fat-soluble vitamins.

In Thailand, anti - obesity drug in the group of adrenergic agonist such as phentermine, mazindol, cathine and amfepramone is the main group that varies use (Thai FDA; 2002).

Table 1: Categories of anti – obesity drugs

1. Drugs acting on the central nervous system

    1.1 Adrenergic agonists

        Such as: amphetamine, methamphetamine, phenmetrazine , phendimetrazine, amfepramone, cathine, diethypropion, mazindol, phentermine

    1.2 Serotonergic agonists

        Such as: dexfenfluramine, fenfluramine, fluoxetin

    1.3 Combined adrenergic and serotonergic agonist

        Such as: sibutramine

2. Drugs acting on the gastrointestinal system

        Sush as: Orlistat, acarbose

(Atkinson, 2000; Pi-Sunyer, 1992)

2.1.2.2 Indications and contraindications for anti – obesity drugs in the group of psychotropic substance schedule 2

As noted earlier, treatment of obesity with drugs will only be effective if the drugs are continuing used indefinitely. Therefore, anti – obesity drugs must be used carefully and only with appropriate indications. Table 2 lists some of the criteria commonly used to determine that those who are only modestly overweight should be

explored. The FDA criterion for use of anti – obesity drugs is that BMI of 30 (Thai FDA, 2002).

Table 2: Criteria for using anti – obesity drugs in the group of psychotropic substance schedule 2

1.	Criteria for use
	1.1 BMI > 30 kg/m (FDA)
	1.2 BMI > 25 kg/m, if complications present
	1.3 Age > 18 yr., < 65 yr.
2.	Contraindications or cautions for use
	2.1 Pregnancy or lactation
	2.2 Unstable cardiac disease
	2.3 Uncontrolled hypertension
	2.4 Other drug therapy, if in compatible
	2.5 Severe psychiatric disorder or anorexia (contraindication or caution)
	2.6 Presence of any severe systemic illness (caution)
	2.7 Closed – angle glaucoma (caution)

(Hitchcock, 2002; Atkinson, 2000; Pi-Sunyer, 1992)

2.1.2.3 Side effects and adverse events of anti-obesity drugs in the group of psychotropic substance schedule 2

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Most side effects occur early in the course of treatment and improve or resolve within the first month. Dry mouth is common and often persists, as does fatigue or asthenia. Sleep disturbances, such as insomnia, drowsiness, and vivid dreams, tend to resolve. Gastrointestinal (GI) disturbances occur, such as diarrhea, particularly with serotonin agonists, and constipation with adrenergic agonists. The three most severe

adverse events that may occur with anti-obesity drugs are altered mental functioning, abnormalities of cardiac valves, and primary palmary hypertension. Potential side effects and adverse events resulting from obesity were shown in Table 3 (Hitchcock, 2002; Atkinson, 2000).

Table 3: Potential side effects and adverse events resulting from anti-obesity drug in the group of psychotropic substance schedule 2

Major

- Primary pulmonary hypertension
- Abnormalities of cardiac valves

Minor

- Dry mouth
- Fatigue
- Hair loss
- Altered mental function
- Constipation
- Sleep disturbances
- Abnormal menses
- Headache
- Blurred vision
- GI disturbance
- Sweating
- Altered sex drive

(Hitchcock, 2002; Atkinson, 2000; Pi-Sunyer, 1992)

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2.1.2.4 Anti-obesity drug usage in Thailand

The popular methods that were used to reduce weight are diet, physical exercise and anti-obesity drug. Nowadays, we can classify anti-obesity drug into;

A. Type of anti-obesity drug in Thailand

In Thailand, the groups of anti – obesity drugs of varying uses are shown below (Thai FDA, 2002; Panpreecha, 1997; Chanmanee, 1994);

The group of psychotropic substance schedule 2

Adrenergic agonist: Such as amfepramone, phentermine, mazindol, and cathine. This group of drugs is effective on stimulating central nervous system (CNS) and sympathetic nervous system.

This group was controlled by Thai FDA under the Psychotropic Substance Controlling Act B.E. 2518.

Thermo: Such as thyroid hormone

Thyroid hormone has been known since the turn of the century to increase metabolic rate and thermogenesis. Patients with spontaneous overactivity of thyroid hormone production have increased resting metabolic rate, often lose weight and report increased sensation of heat and sweating.

Laxative: Such as bisacodyl, Senna

Some eating disordered individuals misuse laxatives as a means of purging. These individuals are under the misconception that through the use of laxatives they can get rid of unwanted calories. Since most of the calories eaten are absorbed by the small intestine right after eating, the method of using laxatives for weight loss is actually ineffective. Many laxatives act by irritating the lining of the intestines or by directly stimulating nerves. Continual over stimulation of the intestines form laxative abuse can eventually cause the bowels to become non-responsive.

Diuretic agent: Such as HCTZ, furosemide

Individuals suffering from eating disorders sometimes misuse diuretics in an attempt to lose or control their weight. In actuality diuretic misuse by the eatingdisordered individual does not facilitate weight loss but instead only reduce the amount of water in the body. Water in the body is vital for the appropriate functioning of all systems. By misusing diuretics the eating disordered individual is robbing the body of this crucial resource.

Hypnotic agent / Anxiolytic agent: Such as diaxzepam, lexotan

This drug is used to relief side effect of anti-obesity drug especially in the group of central nervous system stimulant because this drug actions as a sedative that depresses activity of central nervous system and reduces anxiety and induces sleep.

Dietary supplements and herbal preparations

Traditionally, dietary supplements referred to products made of one or more of the essential nutrients, such as; vitamins, minerals, and protein. This includes vitamins, minerals, herbs, botanicals, and other plant-derived substances, and amino acids (the individual building blocks of protein) and concentrates, metabolites, constituents and extracts of these substances. Dietary supplements come in many forms, including tablets, capsules, powders, softgels, gelcaps, and liquids. FDA regulations require that certain information appear on dietary supplement labels. Information that must be on a dietary supplement label includes: a descriptive name of the product stating that it is a "supplement;" the name and place of business of the manufacturer, packer, or distributor; a complete list of ingredients; and the net contents of the product. In addition, each dietary supplement (except for some small volume products or those produced by eligible small businesses) must have nutrition labeling in the form of a "Supplement Facts" panel. This label must identify each dietary ingredient contained in the product. By law, the manufacturer is responsible for ensuring that its

dietary supplement products are safe before they are marketed. Unlike drug products that must be proven safe and effective for their intended use before marketing, there are no provisions in the law for FDA to "approve" dietary supplements for safety or effectiveness before they reach the consumer. Also unlike drug products, manufacturers and distributors of dietary supplements are not currently required by law to record, investigate or forward to FDA any reports they receive of injuries or illnesses that may be related to the use of their products. Once the product is marketed, FDA has the responsibility for showing that a dietary supplement is "unsafe," before it can take action to restrict the product's use or removal from the marketplace. Dietary supplements also are sold in grocery , drug and national discount chain stores, as well as through mail-order catalogs, TV programs, the Internet, and direct sales.

In the other side, weight loss products that contain herbal or natural sounding ingredients are not always safe. Ephedra (ephedrine, ma huang[R]) has proved to be one of the riskier weight loss supplements. Products containing ephedrine extracts have caused hundred of illness, including: heart attack, seizures and strokes. They are amphetamine-like compounds with powerful and potentially lethal stimulant effects on the central nervous system and the heart.

B. The controlling of anti-obesity drug import in the group of psychotropic substance schedule 2

Narcotic Control Department of Thai Food and Drug Administration (Thai FDA) has duty to control anti-obesity drug which active in CNS stimulant since 1977. It declared amfepramone as psychotropic substance schedule 4, then it declared mazindol, phenmetrazine and phentermine as psychotropic substance schedule 4 in 1981, N-ethylampheramine in 1982 and fencametamine in 1986. Cathine was declared to be psychotropic substance schedule 3 in 1986. Then all of anti-obesity drugs were upgrade to be psychotropic substance schedule 2 in 1992. Furthermore, by law, Thai FDA was

the only officer that had power to import anti-obesity drug in Thailand, was the only one that can sell anti-obesity drugs to requested physicians. Table 4 shows the amount of anti-obesity drug import, since the year 1993 to 2001. All of these anti-obesity drugs are psychotropic substance schedule2 (Thai FDA, 2002; Panpreecha, 1997; Chanmanee, 1994).

Table 4: The amount of anti-obesity drug import, since the year 1993 to 2001

Year	The amount of consumption (Kg.)								
Generic Names	1993	1994	1995	1996	1997	1998	1999	2000	2001
Amfepramone	116.75	397.50	494.44	386.25	314.00	300.00	251.24	637.50	95.73
Phentermine	36.00	395.90	684.00	304.50	1,252.50	742.50	1,094.40	1,786.50	1,273.60
Cathine	2.00	11.87	8.13	-	40.00	92.48	161.54	60.00	-

(Thai FDA, 2002)

C. The controlling of anti-obesity drug prescribing in the group of psychotropic substance schedule 2

Anti-obesity drugs can reach patients only by physician's prescription and medical report of prescription will be made for patients with balance quantity to the Thai FDA each time before next prescription. In legal, the physicians must set the list of anti-obesity drugs that they prescribed to their patients and then report it back to Thai FDA. But in fact, there were no reports to confirm that all of physician done, and in the past, Thai FDA did not have any specific measures to control and conduct this problem (Patchrapisarn, 2002; Panpreecha, 1997; Chanmanee, 1994).

D. The behavior of anti-obesity drug prescribing

The Narcotic Control Division (2002) has reported that nowadays the prescriptions of doctors about anti - obesity drug are varied and seem to be irrational. The doctors use other drugs combined with anti - obesity drug such as:

Type I Phentermine, bisacodyl , diazepam and vitamin

Type II Phentermine, thyroxine, HCTZ, lexotan and senokot

Type III Phentermine, propranolol, diazepam and HCTZ

Type IV Phentermine, propranolol, diaxepam, thyroid extract, bisacodyl and furosemide.

Type V Phentermine, fenfluramine and thyroxine.

It was shown that other drugs are prescribed in combination with the prescription of anti - obesity drugs to speed up weight loss. Some combination that they prescribed contain up to six different substances which adolescent women willingly swallow in the hope of remaining pencil-thin. And at present, there are no strictly measures to control about these prescriptions. Thai FDA just controls the amount of drugs. In each diet clinic can has anti - obesity drugs in the group of psychotropic substance schedule 2 not more than 5,000 units. (Bangkok Post, 2003; Bangkok Post, 2002; Thai FDA, 2002).

2.1.2.5 Information about consumption of anti-obesity drug in the type of psychotropic substance in Thailand

The amount of anti-obesity drug consumption especially in the group of psychotropic substance mostly increased since the year 1985 until 1992 (Table 5).

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Table 5: The amount of anti-obesity drug consumption; during 1985 and 1992

Year	The amount of consumption (Kg.)							
	1985	1986	1987	1988	1989	1990	1991	1992
Generic Names								
Amfepramone	90.00	74.25	112.50	112.50	133.43	441.42	317.25	461.84
Mazindol	1.05	1.27	2.09	3.26	2.60	-	-	-
N-Ethylamphetamine	69.12	51.84	157.28	197.60	210.96	-	-	-
Phendimetrazine	21.60	39.59	53.99	81.98	79.96	-	-	-
Phentermine	93.36	74.42	82.14	71.00	86.60	-	-	-
Cathine	-	-	-	-	-	78.33	24.84	74.25

(Thai FDA, 2002)

Obesity drug consumption and anti-obesity drug import were still high. These figures were in accorded with the increase number of private clinics and hospitals. The number of private clinic and hospital were shown in Table 6.

Table 6: Number of private clinics and hospitals that have the license to dispense psychotropic substance schedule 2.

Year	1997	1998	1999	2000	2001
The private clinic and hospital	310	670	862	1,127	1,625

(Thai FDA, 2002)

Furthermore, at present, according to the law, Thai FDA still prohibits the dispensing of psychotropic substance schedule 2 in drugstores. At present, there are four types of psychotropic substance in Thailand. Anti-obesity drugs such as phentermine,

amfepramone and cathine that popularly used in Thailand are psychotropic substance schedule 2. Types of psychotropic substance are shown in appendix A.

2.2 Health psychology theories

2.2.1 The studies related to body image

During the adolescence period, dramatic physical changes take place. Teenagers become concerned about their bodies. The concept of body image appears to be salient in the adolescent age group (Blyth, 1988). Many studies have shown that body image is important for adolescents' self-evaluation, their personality, and their eating behavior (Henderson, 1995; Hiller, 1981; Reid, 1997). Adolescents are also influenced by the mass media regarding body image formation. Myers (1992) found that watching even 30 minutes of TV programming and advertising can alter a woman's perception of the shape of her body.

Definition of Body Image:

Body image can be defined as the mental image that a person forms of his/her body as a whole, including both its physical characteristics (body precept) , and his/her attitude towards these characteristics (body concept) (Corsini, 1994) This definition is similar to what Schlundt (1990) and Kelly (1992) defined; they explained that body image is like an image in the "mind's eye", or there is an idea of what the body is and what it looks like, which is sensed as a physical experience. To be more specific, Rodin (1985) defined body image as feelings, perceptions, thoughts, and reactions

that a person has about his or her body size, shape, weight, and appearance; it is the ways person subjectively experiences his or her body (cited in Wolinsky, 1996)

However, it also relates to cultural standards of attractiveness, physical competence and gender. Corsini (1987) has defined body image as the picture and evaluation of one's body; as basic part of one's self-concept. While cultural standards of beauty are critical in forming this self – evaluation, one's attitudes are even more influential in determining one's self-concept.

According to Rodin (1985), body image is the picture of our body in our mind. They also proposed that there are fundamental differences in the meaning of the body for men and women. Men tend to see their bodies as functional and active as tools that need to be in shape and ready for use. On the other hand, women view their bodies more along aesthetic and evaluative dimensions.

In addition, Gardner (1997) said that body image involved perception, imagination, emotion, and physical sensations of and about our bodies. It was psychological in nature, and much more influenced by self-esteem than by actual physical attractiveness as judged by others. It was not inborn, but learned. This learning occurs in the family and among peers.

In sum, body image is a critical factor in how a person feels about him or herself and often has a significant impact on feelings of self-esteem and self – worth. Negative body image can lead to a variety of social, health, and psychological programs including shyness, eating nutrition problems and depression.

The Adolescents' Expected Body Size

Adolescents are profoundly affected by the images of ideal body builds/types taught by their culture (Collins, 1981). In western culture, as well as modern eastern culture, most adolescent males and females prefer to be of a body size proportion representative of their ideal standard of cultural beauty and society's standards for beauty. Then males and females are unhappy with their bodies, as are those who are short or fat. Simmons and Rosenberg (1975) found those adolescents are particularly sensitive to appearance norms and girls show more concern with their appearance than do boys (cited in Wolinsky, 1996). One study in America showed the importance of individual body characteristics in self-ratings of physical attractiveness by male and female college students. The results showed that both sexes felt that genera appearance, facial complexion, weight distribution, body build and teeth were important to physical attractiveness (Wolinsky, 1996)

Therefore, adolescents learn to equate good appearance with being thin, that is not only to represent attractiveness, but also to symbolize success, self-control, and higher socioeconomic status (Dittrich, 1998)

Hesse-Biber (1987) noted that Western culture judges a man primarily in terms of power, ambition, and ability, Man exists in the worlds of thought and action. A woman, on the other hand, is judged almost entirely in terms of her appearance, her attractiveness to men, and her ability to reproduce the species. Thus, men are not bound by the pressure to look slender or rely on his physical appearance but they strive for upward mobility through hard work, ability, and thrifty ways. However, women are socialized to rely on their beauty and charm to attract the opposite sex. The stakes of

physical attractiveness for women are high, since appearance, including body weight, affects social success.

In sum, body perceptions, and gender role which differ among men and women lead them to have differences in expected body size and bodily concerns.

Female adolescents' Expected Body Size

The definition of beauty and the ideal body shape varies across cultures and has changed over time. Since beauty is judged by one's physical appearance, social norms are a critical factor in how others judge us and how we judge ourselves (Wolinsky, 1996). In contemporary American society, youth, fitness, and thinness (Schur, 1984 cited in Wolinsky, 1996) embody the physical ideal.

Hesse-Biber (1987) noted that being female is the primary criterion for membership in the culture of beauty. The object of worship is the perfect body. The primary rituals are dieting and exercising with obsessive attention to monitoring progress, weighing the body at least once a day and constantly checking calories.

Gordon-Larsen (2001) studied attitude toward body image by using the body image assessment methodology. Adolescents were given a series of nine randomized cards ranging from very thin to obese. Adolescents were asked to indicate which drawing most resembled their current figure (current body size) and the figure they wished most to resemble (ideal body size); a high score indicates larger body size. A body dysphoria score was derived from the discrepancy between current and ideal figures. A high score indicates greater discrepancy between ideal and current body size.

Paquette (2004) revealed that body image is not a static construct, but is dynamic and fluctuates as women encounter new experiences and re-interpret old ones. The powerful and unconscious impact of media on body image was mediated by women's

internal contexts (self-confident and self-critic) and their relationship with others such as; partners and other women. Body image was not so much influenced by the nature of others' comments but interpretation of their meaning. While some women's narratives expresses their internalized sociocultural norms, others' described acceptance of their bodies following a process of reflection and empowerment.

Adolescent females are extremely aware of and sensitive to their cultural norms regarding appearance. Matsuura (1992) found that in Japan the desire to be thinner has increased within the last 20 years, accompanied by an increase in body size dissatisfaction among the Japanese (cited in Dittrich, 1999). This result is similar to the study by Lee in 1993; which asked 1,044 Hong Kong born bilingual university students to complete the English version of the EAT (Eating Attitudes Test). The results indicated that most of them were in agreement with their Western counterparts in term of their desire to be slim (cited in Dittrich, 1999).

Concerning Thai female standard, according to Thai Wacoal (1992), the ideal Thai beauty's height should be between 5 feet 1 inch to 5 feet 5 inches or 153 to 165 cm., breast 34 inches or 85 cm., waist 23 inches or 57.5 cm., and hips 36 inches or 90 cm. Most of the respondents thought that women have the most beautiful shape and size when they are 15-25 years old. However the standard has slightly changed in height according to Mahachoklertwattana (1997). Currently most Thai parents want their daughters to be 170 centimeters up which is comparable to models or beauty contest contestants whom they think are beautiful and charming.

In sum, female adolescents' expected body size has changed from the past as women in the present day tend to prefer taller, ultra-slim bodies. Thy consider supermodels or superstars' shape as their ideal body.

2.2.2 The studies related to self esteem

Self-esteem involves how much a person values herself and appreciates her own worth and importance. For example, a teen with healthy self-esteem is able to feel good about her character and her qualities and take pride in her abilities, skills, and accomplishments. Self-esteem is the result of comparing how we'd like to be and what we'd like to accomplish with how we actually see ourselves. Everyone experiences problems with self-esteem at certain times in their lives - especially teens who are still figuring out who they are and where they fit into the world. How a teen feels about herself can be related to many different factors, such as her environment, her body image, her expectations of herself, and her experiences. For example, if a person has had problems in her family, has had to deal with difficult relationships, or sets unrealistic standards for herself, this can lead to low self-esteem.

In order to improve self-esteem, the first step is to recognize each ability to improve. Learning what can hurt self-esteem and what can build it is also important. Then, with a little effort, a person can really improve the way she or he feels about oneself.

Field (1999) said that constant criticism can harm self-esteem - and it doesn't always come from others! Some teens have an "inner critic," a voice inside that seems to find fault with everything they do - and self-esteem obviously has a hard time growing in such an environment. Some people have modeled their inner critic's voice after a critical parent or teacher whose acceptance was important to them. The good news is that this inner critic can be retrained, and because it now belongs to you, you can be the one to decide that the inner critic will only give constructive feedback from now on. It may help to pinpoint any unrealistic expectations that may be affecting your self-esteem.

Do you wish you were thinner? Smarter? More popular? A better athlete? Although it's easy for teens to feel a little inadequate physically, socially, or intellectually, it's also important to recognize what you can change and what you can't, and to aim for accomplishments rather than perfection. You may wish to be a star athlete, but it may be more realistic to set your sights on improving your game in specific ways this season. If you are thinking about your shortcomings, try to start thinking about other positive aspects of yourself that outweigh them. Maybe you're not the tallest person in your class and maybe you're not class valedictorian, but you're awesome at volleyball or painting or playing the guitar. Remember - each person excels at different things and your talents are constantly developing.

If you want to improve your self-esteem, there are some steps you can take to start empowering yourself (Levine and Smolak, 1996):

- Remember that self-esteem involves much more than liking your appearance. Because of rapid changes in growth and appearance, teens often fall into the trap of believing their entire self-esteem hinges on how they look. Don't miss the inner beauty that's more than skin deep in yourself and in others.

-Think about what you're good at and what you enjoy, and build on those abilities. Take pride in new skills you develop and talents you have. Share what you can do with others.

-Exercise! You'll relieve stress, and be healthier and happier.

-Try to stop thinking negative thoughts about yourself. When you catch yourself being too critical, counter it by saying something positive about yourself.

-Take pride in your opinions and ideas - and don't be afraid to voice them.

-Each day, write down three things about yourself that make you happy.

-Set goals. Think about what you'd like to accomplish, and then make a plan for how to do it. Stick with your plan and keep track of your progress. If you realize that

you're unhappy with something about yourself that you can change, then start today. If it's something you can't change (like your height), then start to work toward loving yourself the way you are.

-Beware the perfectionist! Are you expecting the impossible? It's good to aim high, but your goals for yourself should be within reach.

-Make a contribution. Tutor a classmate who's having trouble, help clean up your neighborhood, participate in a walk-a-thon for a good cause, the list goes on. Feeling like you're making a difference can do wonders to improve self-esteem.

-Have fun - enjoy spending time with the people you care about and doing the things you love.

It's never too late to build or improve self-esteem. In some cases, a teen may need the help of a mental health professional, like a therapist or psychologist, to help heal emotional hurt and build healthy, positive self-esteem. A therapist can help a teen to learn to love herself and realize that her differences make her unique.

2.2.3 The studies related to social stigma of obesity

People, who are excessively fat, often face stigma and ridicule. Current appearance norms value thinness for women and slim, muscular builds for males (Schur, 1984). General speaking, in the Western world, whenever obese people "have existed and whenever a literature has reflected aspects of the lives and values of the period, a record has been left of the low regard usually held for the obese by the thinner and clearly more virtuous observer" (Mayer, 1968).

With their highly visible traits, others react strongly, frequently perceiving obese people as deviants ; such reactions often impose great social stigma because other members of a group often feel "contaminate" by association with them. This negative

response may produce a formidable barrier to full social participation and acceptance (Mayer, 1968).

The strength of the stigma attached to obesity may depend on the blame or responsibility that others assign to these people for their appearance (DeJong, 1980).

2.2.4 The studies related to inferiority complex of obesity

The inferiority complex is different from the inferior feeling of which the former is the master but the latter can become a servant to the individual. As a master, the complex may cause a person to have ultimate failure and maladjustment; as a servant, the feeling may produce success in achieving valuable goals in life. No one succeeds without some inferior feeling and almost everyone who fails does so because of an inferiority complex

Inferiority complex may be defined as an abnormal or pathological state which, due to the tendency of the complex to draw unrelated ideas into itself, leads the individual to depreciate himself, to become unduly - sensitive, to be too eager for praise and flattery, and to adapt-a derogatory attitude toward others.

Symptoms of inferior feelings are of two general types: withdrawal tactics, including self-consciousness, sensitiveness, and withdrawal from social contacts; and aggressive tactics, including excessive seeking for attention, criticism of other overly dutiful obedience, and worry. Withdrawal strategies are more frequently used than aggressive strategies. The self conscious individual may be excessively embarrassed and very timid in the presence of others, being either incapable of action from fear or overactive in a conspicuous way from bewilderment. Their sensitivity to criticism

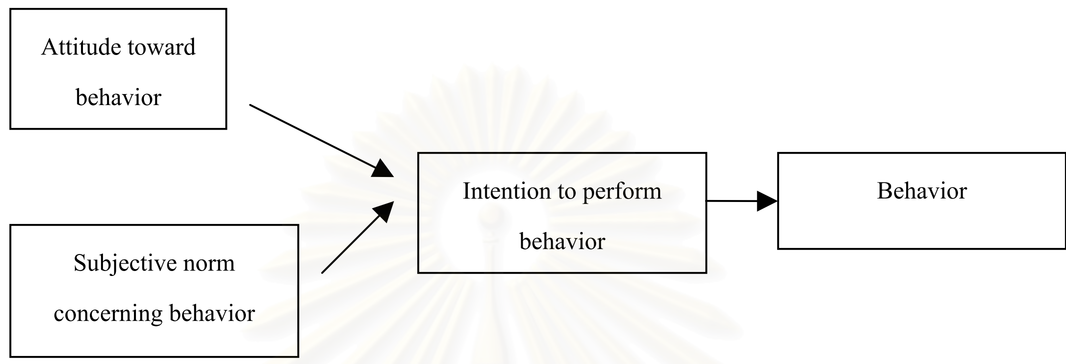
produces resentment to unfavorable comparisons, offense at friendly jests, rebellion at correction, defense of their self-chosen course of action, desire for praise, and an excessive attention to little things. It always suspects personal injustice and is ever ready to make a defense. Withdrawal from social contacts shows fear of people and lack of self confidence.

2.3 The theories of drug use behavior

2.3.1 The Theory of Reasoned Action (TRA)

The Theory of Reasoned Action was pioneered by Ajzen and Fishbein in 1980. It is a model of the psychological processes that mediate observed relations between attitudes and behavior. The Theory of Reasoned Action is composed of attitudinal, social influence, and intention variable to predict behavior. The theory asserts thatintention to perform behavior is determined by the individual's attitude toward the performing the behavior and subjective norm held by the individual.

Figure 1: Schematic presentation of the theory of reasoned action



Attitude: An individual's positive or negative feeling associated with performing a specific behavior. According to Ajzen and Fishbein (1975), in general, an individual will hold a favorable attitude toward a given behavior if he/she believes that the performance of the behavior will lead to mostly positive outcomes; on the other hand, if the individual believes that mostly negative outcome will result from the behavior, he/she will hold a negative attitude toward it (Ajzen, 1980).

Subjective Norm: It is determined by an individual's normative beliefs that significant others think he/she should or should not perform the behavior, coupled with motivation to comply with its referents. Significant others are individuals whose preferences about a person's behavior in this domain are important to him/her (Eagly and Chaiken 1993).

Intention: Likelihood of doing something, like buying a brand. Thus, an intention is a type of judgment about how, in the present context, an individual will behave toward a particular brand. Intention is the best predictor of behavior and attitude and subjective norms influence the intention. Fishbein and Ajzen (1980, 1975) have claimed that variables not explicitly included in the Theory of Reasoned Action (e.g., demographic variables, attitudes toward target and personality traits) can affect intention and behavior

only if they influence the attitudinal or normative considerations or their relative weights. For instance, an individual's prior experience of using coupons affects intention but not directly on future behavior (Bagozzi, Baumgartner and Yi 1992). The importance of attitude and subjective norm of an individual to predict behavior vary by situation. According to Bagozzi, Baumgartner and Yi, state versus action orientation affects the relative importance of attitudes and subjective norms in the formation of intentions. Specifically, as individual becomes more action oriented, attitudes are more important than subjective norms as a basis in intention forming. On the other hand, as individual becomes more state oriented, the relative importance of subjective norms in the formation of intentions increases.

In Theory of Reasoned Action, there are three conditions in which intention of an individual can accurately predict the behavior. First, the intention and behavior measures correspond in specificity of action, target, context, and time frame. Second, intention and behavior do not change in the interval between assessment of intention and assessment of behavior. Finally, the behavior in question is under the individual's volitional control, i.e., he/she can decide at will to perform or not perform the behavior. (Ajzen and Fishbein 1980)

The validity of the Theory of Reasoned Action is extensive within this condition, however, under circumstances where internal and external factors might hinder the volitional control of the behavior, the Theory of Reasoned Action is a relatively poor predictor of these types of behaviors. Thus, the Theory of Planned Behavior which is an extension of the Theory of Reasoned Action was developed incorporating behavioral control factors in predicting behavior. It posits that most intended behaviors are subject to some uncertainty and that the success in performing a behavior depends not only on intention but also on factors that may interfere with behavior control. For example, external factors such as money, opportunity, and the cooperation of others and internal

factors such as skills and self-control may influence a behavior (Netemeyer, Burton and Johnston 1991).

The Theory of Reasoned Action has been applied to strategy choices in Prisoner's Dilemma games, blood donation, voting, church attendance, family planning, smoking marijuana, mothers' infant feeding practices, dental hygiene behaviors, having an abortion, purchasing various consumer products, attendance at employee training, seatbelt use, and AIDS research (Eagly and Chaiken 1993).

Conclusion

The Theory of Reasoned Action of Fishbein and Ajzen assert that intention is the best predictor of behavior and attitude and subjective norm held by individual make up the intention. The behavior is made as a rational decision by the individual under the volitional condition and the situation that an individual is in makes a difference in whether the attitude or the subjective norms plays greater role in forming the intention.

The Theory of Reasoned Action has been applied to many health issues such as AIDS campaign, anti-smoking campaign, safety belt usage, and anti-drug campaign, etc. to determine which factors influence individuals to act in certain ways and try to develop better ways to effectively communicate the message.

2.3.2 Health Belief Model (HBM)

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The HBM was originally developed around 1952, as a systematic method to explain and predict preventive health behavior. It focused on the relationship of health behaviors, practices and utilization of health services. In later years, the HBM has been revised to include general health motivation for the purpose of distinguishing illness and sick-role behavior from health behavior. It is generally regarded as the beginning of systematic, theory-based research in health behavior.

The factors which led to the development of the HBM are 1) the health setting of the 1950's, 2) the professional training and background of the originators. The health setting during the early 1950's for the US Public Health Service was primarily oriented toward prevention of disease and not treatment of disease. Medical care, which was largely considered appropriate public health work, was not the focus during that time. Thus, the public health concern for problems connected with patient's symptoms and their compliance with medical regimens was slight. The originators of the HBM were rather concerned with the widespread failure of individuals to engage in preventive health measures.

The model is influenced by the theories of Kurt Lewin, which states that it is the world of the perceiver that determines what an individual will and will not do. The originators of the HBM conducted major studies in the 1950's and 11960's meant to systematically explain preventive health behavior. Godfrey Hochbaum initiated the first research on the HBM in 1952 by an attempt to identify factors underlying the decision to obtain a chest x-ray for the early detection of TB. Thus, like Lewin, the early researchers also included in the model a strong component of the behaving individual's perceptual world. Later, researchers included motivation as a major component. Also a strong concentration on the individual's current dynamics, believing that prior experience exercises influence only insofar as it is still represented in the individual's present state of affairs.

The HBM attempts to predict health-related behavior focusing on beliefs and attitudes of individuals. Emphasis is placed on the above described categories. The model is used in explaining and predicting preventive health behavior. The HBM has been applied to all study all types of health behavior. A person's motivation to undertake a health behavior can be divided into three main categories: individual perceptions, modifying behaviors, and likelihood of action. Individual perceptions are factors that affect the perception of illness or disease, they deal with the importance of health to the

individual, perceived susceptibility, and perceived severity. Modifying factors include demographic variables, perceived threat, and cues to action. The likelihood of action discusses factors in probability of appropriate health behavior; it is the likelihood of taking the recommended preventive health action. The combination of these factors causes a response that often manifests into action, provided it is accompanied by a rational alternative course of action.

The HBM states that the perception of a personal health behavior threat is itself influenced by at least three factors: general health values, which include interest and concern about health; specific health beliefs about vulnerability to a particular health threat; and beliefs about the consequences of the health problem. Once an individual perceives a threat to his/her health and is simultaneously cued to action, and his/her perceived benefits outweighs his/her perceived benefits, then that individual is most likely to undertake the recommended preventive health action. There may be some variables (demographic, sociopsychological, and structural) that can influence an individual's decision.

Key Descriptors:

Perceived Susceptibility - Each individual has his/her own perception of the likelihood of experiencing a condition that would adversely affect one's health. Individuals vary widely in their perception of susceptibility to a disease or condition. Those at low end of the extreme deny the possibility of contracting an adverse condition. Individuals in a moderate category admit to a statistical possibility of disease susceptibility. Those individuals at the high extreme of susceptibility feel there is real danger that they will experience an adverse condition or contract a given disease.

Perceived Severity - refers to the beliefs a person holds concerning the effects a given disease or condition would have on one's state of affairs. These effects can be considered from the point of view of the difficulties that a disease would create. For instance, pain

and discomfort, loss of work time, financial burdens, difficulties with family, relationships, and susceptibility to future conditions. It is important to include these emotional and financial burdens when considering the seriousness of a disease or condition.

Perceived Benefits of Taking Action - taking action toward the prevention of disease or toward dealing with an illness is the next step to expect after an individual has accepted the susceptibility o f a disease and recognized it is serious. The direction of action that a person chooses will be influenced by the beliefs regarding the benefit of action.

Barriers to Taking Action - However, action may not take place, even though an individual may believe that the benefits to taking action are effective. This may be due to barriers. Barriers relate to the characteristics of a treatment or preventive measure may be inconvenient, expensive, unpleasant, painful or upsetting. These characteristics may lead a person away from taking the desired action.

Cues to Action - an individual's perception of the levels of susceptibility and seriousness provide the force to act. Benefits (minus barriers) provide the path of action. However, it may require a 'cue to action' for the desired behavior to occur. These cues may be internal or external.

Self-Efficacy - The individual’s belief in his or her being able to successfully execute the behavior required to produce the desired outcomes.

2.4 Conceptual framework of the study

The theoretical framework, it implies that attitudes toward behavior of anti-obesity drug usage, subjective norm, perceived susceptibility, perceived severity, perceived benefits, and process of change are important to perform behavior of anti-obesity drug usage.

The conceptual framework of this study is mainly aimed to investigate behavior of anti-obesity drug usage, to identify the reasons behind anti-obesity drug usage among female adolescents and to explore the perceived consequence of anti-obesity drug usage including drug efficacy, drug side effect, and drug satisfaction among non-obese female adolescents. The theory of reasoned action was mainly used in the conceptual framework. Due to people or referents who are important to students may motivate and persuade the students to use anti-obesity drug, so subjective norm is included in the conceptual framework as the sociological factor and familial factor. According to the health belief model when individuals are faced with a potential threat to their health they consider their susceptibility to, and severity of the health threat. For example, those female adolescents who perceive themselves to be susceptible to obesity and belief it to be a serious for them. The example for perceive benefit, female adolescents who believe that perform anti-obesity drug has many benefits and a few barriers are more likely to engage in the using anti-obesity drug. Moreover, cues to action are used to describe behavior of female adolescents after receiving the information from their doctors.

In addition, many factors including demographic factor and source of anti-obesity drug information are also included in the conceptual framework.

Figure 2. Conceptual framework of the study: qualitative research

Demographic factors;

- Age
- BMI values
- Allowance per month
- Level of education
- Occupation
- History of heredity
- History of reducing weight
- Health history
- Lover

Sociocultural factors;

- Social attitude
- Familial attitude
- Peer attitude
- Lover attitude
- Media

Behavior of anti-obesity drug usage;

- Period of drug usage
- Pattern of drug usage
- Continuity of drug usage
- Process of drug treatment
- Consistency in visiting doctor

Psychological factors;

- Perception toward body, satisfaction with body
- Perception toward severity of obesity
- Perception toward anti-obesity drug in aspect of efficacy, side effect, and satisfaction

Sources of anti-obesity drug information;

- Medical personal
- Mass media
- Peers
- Family
- Lover

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CHAPTER III

METHODOLOGY

The methodology part included study design, population and sample, variables in the study, data collection, instrument of the study, and data analysis.

3.1 Study design

The study design of this research was a cross-sectional research with qualitative approach. According to the notion of qualitative research, the goal was to deeply investigate into a definable setting in which phenomena could be placed meaningfully within a specific social environment.

3.2 Population and sample

Researcher used snow-ball technique to find the samples. The selection of samples was a purposive sampling based on an important characteristic under study.

The criteria for choosing samples were;

(1) Female adolescents who had Body Mass Index less than 30.

(2) Female adolescents who were currently using anti-obesity drug or female adolescents who ever used anti-obesity drug.

(3) Female adolescents who received service form diet clinic and hospital in Bangkok.

Concerning on the number of sample size, it was difficult to predict accurately what the sample size would be in qualitative research but not less than 30 samples. In

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this study, sampling was terminated at 30 female adolescents. Twenty five female adolescents ever used anti-obesity drug before but not more than 2 years from current and five female adolescents were currently using anti-obesity drug. Researcher collected all data from twenty five female adolescents during the times that they still used anti-obesity drug.

3.3 Variables in the study

The variables were classified into external variable and internal variable.

3.3.1 External variable

3.3.1.1 Sociological factors

Sociological factors or social factors were recruited to study attitudes of society toward obesity, obese people, and anti-obesity drug usage.

Sociological factors in this study including;

- Social attitude
- Familial attitude
- Peer attitude
- Lover attitude
- Media

3.3.1.2 Source of anti-obesity drug information

Sources of anti-obesity drug information were recruited in this study because we needed to know which sources influencing anti-obesity drug usage among female adolescents.

Source of anti-obesity drug information in this study including;

-Medical personnel: The doctors' advice and consult about anti-obesity drug

-Mass media, such as television, radio, newspaper, poster, etc.

- Peer

- Family, such as parents

- Lover

3.3.2 Internal variable

3.3.2.1 Psychological factor

In this study, psychosocial factor including;

- Perception toward body image: female adolescent's feeling of favor or disfavor toward their body image. This variable was able to measure by using body dysphoria values.

- Perception toward severity of obesity, such as female adolescent's feeling that social stigma, inferiority complex was concern or unconcern with obesity

- Perceived consequence of anti-obesity drug usage: female adolescent's feeling about how efficacy of anti-obesity drug usage, how serious the physical, emotional, and

social consequences of taking anti- obesity drug, and how satisfaction of anti-obesity drug usage including drug efficacy, drug cost, and drug benefit.

3.3.2.2 Demographic factors;

- Age: female adolescents aged 20 to 25 years old.
- BMI values: female adolescents who had Body Mass Index values (BMI values) less than 30.
- Allowance per month: income and expenditure per month
- Level of education: educational level that female adolescents are studying in present.
- Occupation: current job or occupation
- History of heredity: member of family, such as female adolescents' parents who had the history of obese or non-obese.
- Health history: female adolescent who had or not had the history of disease or complication of disease, such as hypertension, diabetes, hyperthyroid, etc.
- Lover: female adolescent who had or not had lover.

3.3.2.3 Behavior of anti-obesity drug usage

Behavior of anti-obesity drug usage in the group of female adolescents would be measured in many aspects including; period of drug usage, pattern of drug usage, continuity of drug usage, process of drug treatment, consistency in visiting doctor, and behavior of doctors' prescribing.

3.4 Data Collection

3.4.1 Method

In-depth interviews were mainly used to collect the data.

In-depth interviews

In this study, in-depth interviews were described as open-ended questions and semi-structured interviews. Because we used interview guides that consisted of a set of questions and the guides allowed researcher to generate its own questions to develop interesting areas of inquiry during the interviews.

3.4.2 Place

Researcher collected data in Bangkok area by using snow-ball technique.

3.4.3 Procedures in data collection

Preparing step, pretest step, and data collection step were procedures in data collection of the study.

Preparing step

Researcher coordinated with the concerning organization, such as Thai FDA, universities, diet clinics, private hospitals for receiving and knowing information about the samples. Furthermore, these organizations helped to find out many samples.

Pretest step

Five female adolescents were recruited in the study. After pretest, researcher obtained the weakness of interview guide and experience during the interview.

Data Collection step

After correction interview guide, researcher went on to collect the data.

This study used in-depth interview. The in-depth interview guide was used during the data collection. The duration in each interview was about one to three hours up to each situation. The time for collecting data from the samples was about three months.

3.5 Instruments of the study

Audiotape recordings

Researcher used audiotapes to collect the data because they provided a level of detail and accuracy not obtainable from memory or by taking notes. Researcher was able to receive data in complete. Furthermore, it was easy when we needed to repeat many details again. Each cassette was labeled with number of subject and data of interview. Then all were used again in log book for checking.

Interview Guide

This guide specific the classes of information needed. It might be as simple as a reminder of the topics and subtopics that the respondent should cover during the interview, either spontaneously or with some probing and prodding. Or it might be as specific as a list of questions. The interview guide could make me to decide about how and when to ask questions based on what was already known, or could be judged. The details of in-depth interview guide were shown in Appendix B.

Recorder of nine cards selection

This method was measured by card selection. There were nine cards of the pictures of women in various shapes by way of the body mass index (BMI) from the least BMI (No.1) to the most BMI (No.9). We asked female adolescents to choose two cards from nine. The first card was body of themselves in their opinion on the current size. The second card was the ideal body size that they wanted to be. Next, we calculated the body dysphoria values by using discrepancy of current size and ideal body size. The result of discrepancy could reveal and test female adolescents' perception toward satisfaction with their current body. Nine cards were set by the researcher in suitable way. Nine cards of pictures were shown in Appendix C.

3.6 Data Analysis

This study had several set of raw data. Audiotape would be transcribed (transformed into written text) according to predetermined and accepted methods of transcription. This method would capture the flow of the conversation by including speech hitches, pauses, simultaneous speech, fluctuations in volume, and disjuncture of speech. This raw data needed to be edited, corrected and made more readable even before they can be organized into analysis program process.

3.6.1 The procedure of analysis

3.6.1.1 Preliminary, preparing the data for analysis by writing the information clearly, classified and analyzed the primary question for the last analysis. Although we had any suspect or need some information, we would suddenly collect additional data for the perfection of our information.

3.6.1.2 Grouping and setting all data and documentary concern to the research, the name and the address of the samples, the name of the organization which might concern to the research. After finishing collected data in each day, researcher would observe, translate, and code the interesting details that concerned with the study. Then cutting and writing the interested details in analysis file.

The Analysis Files: in these files were classified the information that collected in each day. The researcher had classified in seven types.

A. The demographic information: consisted of ages, weight, height, average income per month, average expenditure per month, education, occupation, history of heredity, health information, and their lovers. These were the fundamental information for understanding sample groups and concern to the way of using anti-obesity drug of them.

B. The experience information: consisted of the experience in reducing weights among sample groups, the way to reduce, the reason, the benefits and drawbacks of those ways.

C. The sociocultural information: consisted of social factor, such as parents, brothers, sisters, relatives, friend, lover, and media. All information would be collected for the overview of how these factors could affect perception of female adolescents toward their bodies and led them use anti-obesity drug.

D. The information source of the anti-obesity drug

- Medical personal
- Mass communication channel such as television, radio, newspaper, journal, pamphlet, and poster
- Friends
- Family
- Lover

All information would be collected for the overview of how these factors played important role in using anti-obesity drug.

E. The psychological information consists of:

- Perception toward their body, satisfaction in their body
- Perception toward severity of obesity
- Perception toward anti-obesity drug usage in aspect of efficacy, side effect, and satisfaction

G. Behavior in using anti-obesity drug information: study about the using anti-obesity drugs behavior of female adolescents by consideration in these cases

- The feature of the anti-obesity drug from the doctors
- The behavior of anti-obesity drug usage including; ; period of drug usage, pattern of drug usage, continuity of drug usage, process of drug treatment, consistency in seeing doctor, and behavior of doctors' prescribing.

3.6.1.3 Sorting and coding the data.

Classified the data during recording the information in each day and indexing category or cooling which better for the unit of analysis to the last analysis before writing the report and analysis by using content analysis and theme list analysis in order conceptual framework.

This study was already approved by ethical committee of the Faculty of Pharmaceutical Sciences, Chulalongkorn University on 9 December, 2003. weight

CHAPTER IV

RESULTS

The result of behavior and reasons behind anti-obesity drug usage among female adolescents in Bangkok was described. The findings focused on behavior of the non-obese female adolescents who were the client of diet clinic and use anti-obesity drug. Moreover, the factors according to the theories and perception toward anti-obesity drug usage among non-obese female adolescents were explored, to answer the question why they decided to take anti-obesity drug.

Thirty female adolescents were in-depth interviewed, according to interviewed guide; results were grouped into 6 parts, such as demographic information of female adolescents, the behavior of anti-obesity drug usage among non-obese female adolescents, the psychological factor concerning anti-obesity drug usage, sociocultural factor, source of anti-obesity drug information influencing anti-obesity drug usage, and the perception toward anti-obesity drug usage: the perceived consequence of anti-obesity drug usage including drug efficacy, drug side effect, and drug satisfaction.

4.1 Demographic information of female adolescents

Subjects consisted of 30 adolescents aged between 20 and 25 years old with the average age of 23.30, average weight of 53.8 kilograms, and average height of 157.1 centimeters. The average BMI value was 21.81. The maximum and minimum BMI were 27.08 and 18.80. Twenty eight female adolescents had normal nutrition (BMI = 18.5 - 24.9 kilogram/m^2), two were over normal nutrition (BMI > 25 - 29.9 kilogram/m^2), and no one was lower normal nutrition (BMI< 18.5 kilogram/m^2). The average monthly income was 12,033.33 Baht. The average monthly expenditure was 6,983.33

Baht. The maximum and minimum of income per month were 40,000 and 5,000 Baht. The maximum and minimum of expenditure per month were 20,000 and 0 Baht. Twenty two hold bachelor degree, diploma degree was 5, and vocational education was 3. Official was 9, employee was 12, business owner was 4 and studying was 5. Nine female adolescents had lover and twenty one did not have lover. Five of nine female adolescents who had lover already married.

Regarding history of heredity, two female adolescents who had over normal nutrition, had the same over normal nutrition as their family, such as parents, brother, and sister. Female adolescents, who had normal nutrition, had the mixture of over normal nutrition and normal nutrition of history of heredity.

Twenty nine female adolescents had no disease, there was only one was in a high triglyceride and cholesterol level.

Regarding experience of reducing weight, Table 7 shows the most three methods that they chose to reduce their weight. First, use anti-obesity drug form private hospital or diet clinic, second, limiting food, such as less quantitative of their meal or avoid sweet, carbohydrate, fat, and third, physical exercise by walking fast or aerobics. The other methods were sometimes diet in some meal, such as dinner and breakfast. Some of them used dietary supplement, such as Hydrolite[R], Brand extract[R], U-slim[R], Femidane[R], and Cambridge diet[R] from advertisement in the store and information from their friends. Only a few female adolescents used laxative called 1 2 3[R] from their friend's advice. Some Thai herb had the same properties as laxative in reducing their weight. Only one female adolescent who had normal nutrition used bulimic method to prevent her weight gain after the party. She said that

"*I must use it because I need to eat. I can not use fasting method and limiting food. I am drug detailer so I can not avoid eating".* (Interview number 12)

Details of demography of female adolescents were shown in Appendix D.

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Table 7: The method of reducing weight that female adolescents ever used to reduce their weight

Method	Number of female adolescent *
Using the anti-obesity drug from diet clinic and private hospital	30
Limiting food	27
Physical exercise	25
Fasting	14
Use the dietary supplement	8
Using laxative	3
Using herb	2
Bulimic method	1

*Each female adolescent was able to answer more than one reason.

4.2 Behavior of anti-obesity drug usage

Before using anti-obesity drug, most of female adolescents encountered with a lot of experiences in reducing weight.

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4.2.1 The behavioral changes in reducing weight

The behavioral changes in reducing weight of female adolescents were described as follows;

4.2.1.1 Using other reducing weight methods before using anti-obesity drug

It was found in this study that female adolescents had changed their behavior of reducing weight in various patterns before they used anti-obesity drugs. When every female adolescent realized that they had over weight or being fat, they would control their weight as soon as possible. Most of them started to reduce their weight when they began in the period of adolescents aged 13 to 14 years old. The reasons were feeling fat and increasing weight. Limiting food and physical exercise were the first and second choices. They limited food by reducing the consumption of carbohydrate, avoiding some food such as sugar, carbonated beverages, oil, snack, and ate more vegetable less meat. One of them chose to be vegetarian and exercise, such as walk quickly, aerobics, and even chose to avoid dinner together with physical exercise.

More than half of them gave importance to limiting food and physical exercise. Most of them avoided sweet, carbohydrate, fat and changed their behavior to eat more vegetable. They exercised three times a week with around 30 minutes to one hour each time. They agreed that physical exercise could not help them reducing their weight because it was very slow. They mentioned that it just made them looking good or made them healthier. However, there were some people believed that continuously exercise could reduce their weight. Similarly, they believed that limiting food and fasting were very slow and difficult. After they failed from these methods, they still seek many ways that could reduce their weight. Anti-obesity drug usage was the reducing weight method that began to take an important role in this age group. First, most of female adolescents knew anti-obesity drug from their closed friends who succeed from using it. They found the figures of their friends changed in the good ways, such as slimmer and thinner than before. Researcher could conclude the perception toward behavioral change in reducing weight of female adolescents in this detail.

"At first, I perceive that I am fat because I can not wear my shirt. I think it may be a good idea to start reducing weight. You know I try to loose my weight every method that I can but it does not work. After that I know my friend have a good shape by using anti-obesity drug. I ask her about much information concerning the drug. Then I ask my self if I start using it, I would feel better about my weight and body. After that I set my goal to loose weight about 5 kilogram and begin to use anti-obesity drug from diet clinic". I asked her about helping relationship. She said that *"I do not tell anyone about anti-obesity drug because it is a private and not still accept by social".* (Interview number 3, 7, 12, and 23)

In this study, most female adolescents did not know about anti-obesity before. They observed anti-obesity drug usage from their friends and asked for anti-obesity drug information and how to use it. Most of them started to use anti-obesity drug when they were 15 to 18 yeas old. Approximately, two or three years that most of female adolescent changed from other reducing weight methods to use anti-obesity drug.

4.2.1.2 Direct use anti-obesity drug.

Only two normal weight female adolescents chose anti-obesity drug usage as the first choice. After they perceived themselves that they were obese. They would seek many ways to reduce their weight but it was deferent from the first method because they directed used anti-obesity drugs.

Female adolescents in this group gave the reason that they could not be able to use other methods, such as fasting and physical exercise. In fasting, the reasons came from familial and social aspects because they lived in the big family and could not avoid the meal especially at dinner time. Moreover, one of them was the cook so she was not able to reject it. One of them said that

"After fasting I feel swoon and do not have power to do anything, moreover, I must eat at night". (Interview number 2)

In physical exercise, both of them perceived that this method was good, safety, and cost saving but it was not suitable for both of them. They gave the reasons that they were lazy, not sport woman type, and not have enough time especially after work. Some female adolescents mentioned that

"I am not a sport girl, I do not like exercise so this method is not suitable for me". Or *"I do not have times to do anything after coming home, I feel sleepy".* (Interview number 1)

So both of them could not tolerate and use this method continuously and long term. It was similar to the first group that when female adolescents saw the success from using anti-obesity drug from their friends, they decided to use the drugs. These were the behavioral change of female adolescents in using many reducing weight methods and could lead them changing their mind to use anti-obesity drugs.

In conclusion, most of female adolescents tried to use many methods to reduce their weight but they also failed from using them. After that anti-obesity drug began to play the role in weight loss. Most of female adolescents knew the drugs success from their friends. They asked their friend for many details about the drugs, such as place of drug, price of drug, and side effect of drug, etc. They later decided to use anti-obesity drug.

From behavioral change in reducing weight, female adolescents would perceive that which method was benefit and not benefit to them. From asking them about benefit and drawback in each method, they gave the opinions that drawback of anti-obesity drug usage was more than the benefit of them. We still in doubt that why all of them still used anti-obesity drug although they knew it had many weakness and why there were a lot of diet clinics waiting for the license. In the other side, female adolescents perceived that limiting food and physical exercise had many benefits but why they did not continue to

use them. The perception toward benefit and drawback of female adolescents was shown as the follows;

Table 8: Female adolescents' opinion on benefits and drawbacks of various reducing weight methods

Method	Benefit	Drawback
Using anti-obesity drug	Fast	The effect from use of them
	Suitable to the undisciplined person	Heart palpitation
	Cheaper than the other ways such as using	Sleep disturbance
	dietary supplement, liposuction	Irritated
		Dry mouth
		Mouth odor
		Healthy decline
		No energy
		Mentality decline
		Waste the money
		Yo-yo effect
physical exercise	Stronger	Take a long time
	Healthy	Do not have time
	Safe	Lazy
	Reduce only some part	
	Economy	
Limiting food	Economy	Irritated when want to eat the
	Good for health if receive all five nutrition	favorite food
	types	Slow
	Fat can not take into the body	Hungry
	Good shape and stable	Lack of nutrition
	The body need less food	
Fasting	Economy	Difficulty
	Fast	Weakness
Avoid some kind of food	Economy	Irritated when want to eat the
	Safe	favorite food
Using dietary supplement	None	Expensive
		ineffective
using laxative	Help in excretion	Weakness
	Weight reduce	Losing energy and water

After female adolescents had many ideas about these methods and perceived that which methods were benefit or draw back to them. All of these ideas and perceptions seemed to be the internal factor from their minds that influencing them to use or not use these methods to reduce their weight including anti-obesity drug. Many details could be described as the follows;

4.2.2 The reasons to decide using anti-obesity drug

There were many reasons for female adolescents to decide to use anti-obesity drug. Most of the reasons came from did not satisfy their body image, saw the success from their closed friends, wanted to wear the fashion clothes, and teased from closed friends, media, and family.

Most of female adolescents did not satisfy with their bodies. Some of them mentioned that all parts of their bodies were very big than usual. Most of them saw their friends' bodies slimmer than before and after asking their friends they knew that their friends succeeded from using drug. Most of them including two overweight female adolescents could not find fashion garments, which they need to wear so they must order specially. And most of female adolescents received critic or teasing from their friends and indirect teasing from media. Supermodels in fashion magazine were also the important reason. After teasing, they felt depress, nervous and worry about their shapes and tried to loose their weight by using many methods including anti-obesity drug.

One of the important reasons was female adolescents failed from using many reducing weight methods. Most of them used to exercise and limiting food in each meal. However, they found the obstacle from limiting food, such as could not control their mind and could not concentrate about it. The obstacles in physical exercise, such as had no time, lazy, and took a long time for the result.

This study found that most of female adolescents had more than one reason to use the drug. Moreover, all of these reasons occurred from both internal and external factors. Internal factor, such as did not satisfy with their body image and wanted to wear fashion clothes. External factor, such as teasing from friends and media. It seemed that internal factor and external factor were not able to separate together, such as body dissatisfaction might be occurred from teasing from friends and need to wear fashion clothes might be occurred from teasing from super models on fashion magazine.

We could conclude that there were two main reasons to make them decide to use anti-obesity drug. The first came from internal factor and the second came from external factor but both of them could affect each other and could not obviously separate. All of the reasons were shown in Table 9.

Table 9: The reasons to decide using anti-obesity drug

The reasons to decide using anti-obesity drug	Number*
Did not satisfy their body image	30
Saw the success from their closed friends	22
Wanted to wear the fashion cloth	21
Teasing from closed friends, media, and family	20
Failed from using other methods	15
Using anti-obesity drugs was faster	11
Sluggish	5
Could not control their mind	4
Did not concentrate on limiting food	4
Believed or trusted in their friends	3
Wanted to try	3
Wanted to be vigorous	1

*Each female adolescent was able to answer more than one reason.

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4.2.3 The process of anti-obesity drug treatment

Most of female adolescents received information of anti-obesity drug from their friends who succeed from using it. Some of them discussed to the family, such as their mother who paid the prices. Someone chose to go straight to diet clinic after receiving some information from their friends because they felt shy and thought that the others still not accept anti-obesity drug usage.

In this study, clinic and private hospital were the first and second choices for reducing weight. In the part of clinic, most of female adolescents popularly visited the diet clinic more than general clinic. The local place of diet clinics, which female adolescents popularly visited were diet clinic at Ramkhamheang road, Sanambinnam road, and Maboonkhrong Center and Siam square. In the part of private hospital, most of female adolescents needed to go the private hospitals which look after beauty, and body. The local place of private hospital that they popularly visited was private hospital at Charansanitwong road. The main reasons why they went to these places were the advice from close friends that success from these places and from advertisement from mass media, such as television and fashion magazine.

Most of female adolescents began to use anti-obesity drug when they were of 15-18 years old, period began the high school to the university. Some of them used only one to three times before stopping because of severe side effect. However, a few of them came back to use it after their weight increased again. The least period of using was 2-4 days, the longest period was 2 years, and the others were 7 and, 15 days, 1, 2, 4, and 8 months. Female adolescent who used anti-obesity drug in the longest period, she used the drug inconsistency and discontinues because she did not satisfy with her treatment after that she had changed to another clinic.

Regarding in order of treatment, female adolescents said that at first they had to register and measured their weight, height, blood pressure. Next they saw the doctor and

answered the popular question about the weight they needed to lose, the experience of drug usage and drug allergy. The doctors did not give any important advices about the feature of drugs to them. They just gave them the drug and told them to take drugs by following the instruction on label sheath. However, there were few of female adolescents received necessary advices about the drug from their doctors, such as side effect of drug and advantage nutrition, such as did not eat some kind of food during the period of treatment.

Most of female adolescents did not know drug name, types of drugs and drug pharmacology that the doctors prescribed to them. Because their doctors did not advice and explain these details to them. Female adolescents just knew about drugs' symptoms from their usages. Some female adolescent said that

> *"I do not know about drug details because I believe in doctor".* Or *"He does not tell anything about drugs, I know from label sheath".* Or *"I only know that the doctor prescribes capsules and tablets".* (Interview number 1,5, and 12)

Most of female adolescents used only anti-obesity drug method because the side effects of drugs made them weak and could not need to do anything. Furthermore, they perceived that only anti-obesity drug usage was enough because of its strength so they did not need the other methods, such as physical exercise and limiting food. One female adolescent said that

> *"After I take the drug I do not have energy to do anything I feel sleepy, weak, and tired all the time".* (Interview number 11)

Regarding follow up of drug usage, most of female adolescents strictly obeyed and believed the advice of the doctors, such as followed the label carefully. This was because they feared from the dangerous of drug side effect and unsuccessful from the result of drugs. However, there were some of them avoided to take the drugs in the afternoon because they still stayed at school with their friends and did not want to let

their friends know their secrets. Because they perceived that the social did not still accept anti-obesity drug usage. She said that

"I embarrassed if my friend know that I use anti-obesity drug because it is not socially accepted". (Interview number 27)

In short period, female adolescents would use anti-obesity drug continuously. On the other hand, if in long period, they would not because they satisfied with their weight. Most of female adolescents used anti-obesity drug continuously trough their courses of treatment. The standard course of treatment at the beginning was about two weeks until two months. Female adolescents went to see their doctors every two weeks in each time. There were little female adolescents could not use anti-obesity drug trough the course. One female adolescent used anti-obesity drug only one time, it was about two days because she could not tolerate the severity of anti-obesity drug usage. Most of them said that they stopped using anti- obesity drug at the time they could reduce their weight at the level that they needed. Because they feared from severe drug side effect especially the side effect from psychology and thought that it would be better if they limited the food together with physical exercise.

Most of female adolescents mentioned about heart palpitation, annoyance, nauseous, tired, stupor, sweating, gastrointestinal disturbance, mouth odor, and dry mouth. Heart palpitation and irritate were the most side effects, which they encountered. Side effect that concerned with mental disorder was the major symptom that they could not tolerate. After they stopped using drug, most of them became fat or fatter than before likes yo-yo effect. Their weight had risen at the same or multiplies after they used it. Most of them stopped using anti-obesity drug because they satisfied with their weight or could not tolerate with side effect of the drug. However, some female adolescents still used anti-obesity drug until their success because they always thought in their minds that they wanted their ideal figures to be slimmer than current ones.

In case of drug dosage, there were anti-obesity drugs taking before and after the meal 3 to 4 times a day. The times were breakfast, lunch, dinner and before sleeping. Some dosage was set to eat at 4 pm., such as lipid drug. The popular prescriptions were prescribed every two weeks per one time. In every day, most of female adolescents received anti-obesity drugs 10 tablets per day, which divided into 4 meals, 2 tablets for breakfast, 3 tablets for lunch, 3 tablets for dinner, and 2 tablets before going to bed. Anti-obesity drug that was prescribed in the afternoon and dinner was lower lipid drug and before bed time was laxative. There were some cases were prescribed more than 10 tablets per day up to consideration of their doctors.

In cases of anti-obesity drug level and strength, the formulation of drug dosage was prescribed from 1 to 20 levels up to each formula. In each formula contained especially prescription anti-obesity drug combined with non-prescription anti-obesity drug, such as lipid drug, laxative, thyroid drug, diuretic agent, and dietary supplement. As in formula, the doctors prescribed anti-obesity drug in various levels up to their patients, such as levels 1 alone or level 1 with level 2 or level 2 with level 3 difference in each hospital or clinics. The duration in each level took time about 2 weeks not more than 2 month. The level of drug dosage would start from weak, such as level 1 to strength, such as level 20. All of female adolescents never used anti-obesity drug in the highest level. Most of them said that

> *"I satisfy with my weight so it is enough".* Or *"I encounter with severe side effect so it is the time that I shall stop using it".* (Interview number 2, 5, 27, and 29)

After female adolescents satisfied with their weight they had to take stopping drug. They said that this drug was similar to prescription anti-obesity drug but it was weaker. Less of female adolescents used stopping drug so the yo-yo effect might be occurred from this reason.

When asking about consistency in visiting the doctor, most of them did not meet their doctors every times they went to clinics. They just went to the counter and received the same drug. They met their doctors only at time of changing drug level or when they encountered with severe drug side effect. Only few of them that met their doctors every times they went to diet clinics. The interesting point was some female adolescents did not visit their doctors at first time. At first, they received anti-obesity drug from their friends and postal money order. After the drug was terminated or they encountered with side effect, thus they would visit doctors. In addition, one of female adolescent said that there were a lot of patients received anti-obesity drugs only from counter by showing their ID cards at the counter and bought them.

In case of anti-obesity drug prescribing from doctors, all of doctors prescribed anti-obesity drugs in combination. The pattern of combination popularly prescribed could be categorized into two patterns. The first pattern, doctors prescribed anti-obesity drug in the group of psychotropic substance schedule 2 combined with other drugs, such as laxative drug, thyroid drug, diuretic agent, and anti-hypnotic. In second pattern, doctors prescribed anti-obesity drug similar to the first pattern but they also added import dietary supplement to speed up weight loss. The interesting point was that no doctor prescribed single anti-obesity drug in the group of psychotropic substance schedule 2.

Remarks: Researcher collected all data from twenty five female adolescents who stopped using anti-obesity drug, during the times that they still used anti-obesity drug.

4.2.4 The reason to stop using anti-obesity drug

Twenty five female adolescents stop using anti-obesity drug. There were many reasons to stop using anti-obesity drug. We found that satisfaction with their weight was

the most important reason that female adolescents decided to stop using anti-obesity drug. Some of them mentioned that

"I satisfy with my weight a lot so I think it is the time to stop using it". (Interview number 1, 5, and 15)

The second was encountering with severe side effect from using drug, such as heart palpitation, weak, desperate, and, nervous. One of female adolescent encountered with mental disorder. She said that she paid respect to clock tower because she thought that the clock tower was her colleague. After this circumstance, she stopped using anti-obesity drug. The details of reasons to stopped using anti-obesity drug as shown in Table 10.

Table 10: The most important reasons to stop using anti-obesity drug

Reasons	Number of female adolescents*
Satisfaction with their weight	10
Side effect from using	7
Afraid of side effect	4
Worsen health	2
Waste the money	2

* Only 25 female adolescents who stop using anti-obesity drug.

In conclusion, satisfaction with their weight and encountering with severe side effect were the important reasons influencing them to stop using anti-obesity drug. The interesting point was one of them encountered with mental disorder. Regarding medical criteria, this severe side effect was dangerous because it was occurred from nervous system disorder.

4.3 The psychological factor concerning obesity and body image

4.3.1 The perception toward obesity

When asking about obesity, most of female adolescents pointed that they thought about sluggish, stuffed up, and weakness. They said that obese people had problem about dressing when they went to the cloth shop. They had to order the dressmaker to make their cloth and paid more money than the thinner who could buy ready-made clothes at many shops. They could know that they were fatter by seeing at the each part of their body bigger, such as hip, waist, and thigh. Moreover, they realized from around of their friends, and their family.

The perception of female adolescents focused on dressing problem, losing confidence especially toward their bodies, having problem about their beauty, and joining in the society. Because nowadays, the trend of fashion garment was made for thin figure. They thought that obese people could not wear this fashion. In case of beauty, most of them also thought that they did not care about their beauty on the face but they cared about their bodies and tried to make themselves be thinner. In case of having problem about joining in society, most of female adolescents who perceived toward their body in negative way, such as feeling fat. They would not need to go out side especially in place of crowded people. Because they lost their confidence toward their bodies. Some of them thought that obesity could make them weak and sick. There were few female adolescents could not sleep well and had a problem in their articulation when their weight gain. They also perceived that obesity could destroy health and made anyone who was obese could not do a lot of activity like normal weight.

In psychological factor, they thought that obesity could lose their confidence to do many activities especially the activities that concerned with other peoples. One of female adolescents told that when her weight gain or feeling fat, she lost her confidence

when walked alone on the street, got in the car's friend, or had the interaction with the others. They also thought that obese people had created inferiority complex in their mind. However, there were female adolescents thought that the obese people had self-confidence and more friendly than the thinner. Most of female adolescents did not agree with the idea that obese people were condemned from the society. This was because nowadays the society had opened for obese people in many activities including in business. However, there were many female adolescents believed that the condemned from the social was hidden under the value that thin look better than fat. For example, losing an opportunity in the job, education, and joining in the society. One female adolescent had the experience from society's condemn. She went to apply for drug detail job but she lost this position because she looked fatter than other applicants even thought she was not obese. Furthermore, she also thought about the big news that one obese female adolescent almost lost her educational opportunity to be nurse because her weight was over the standard.

We can concluded that most of female adolescents perceived their image of obesity in negative way, such as would encounter with danger, ugliness, inferiority complex, weakness, and problem to join in the society. The details of perception toward obesity were described as follows;

Table 11: The perception toward obesity

Perception toward obesity	Number of female adolescent*
Have problem about wearing the fashion clothes	30
Loss the confidence	25
Have problem about the beauty	24
Have problem to join in the society	24
Sign of weakness	21
Make the inferiority complex	18
Have problem about the movement	14
Nobody likes fat people	9
Hard to have opposite sex attractive	4

*Each female adolescent was able to answer more than one reason.

4.3.2 Perception and attitude toward body image and satisfaction of their bodies

We asked female adolescents to choose two cards from nine. The first selection was body of themselves in their opinion on the current size. The second selection was the ideal body size that they wanted to be. The result of discrepancy could reveal and test female adolescents' perception toward satisfaction with their current body. Table 12 shows that most of normal weight female adolescents chose card number 6 in the first time selection and chose card number 4 in the second time selection. The highest level of the current body size was 7, the least level was 5. The highest level of the ideal body size was 4, the least level was 2. Regarding over weight female adolescents, both of them chose card number 7 in the first time selection and chose card number 4 in the second time selection. The interesting point was both normal weight and over weight female adolescents did not choose the same card in two times selection.

Table 12: Discrepancy between current body size and ideal body size in 30 female adolescents in Bangkok

	Card	1	2	3	4	5	6	7	8	9
Topic*										
Current body size						6	**18**	6		
Ideal body size			5	5	**20**					

* We asked female adolescents the perception toward their current body size and ideal body size during the times they still used anti-obesity drug.

Table 13 shows the relationship between number of female adolescents and body dysphoria values. Body disphoria values derived from the discrepancy of current body size and ideal body size. The highest body dysphoria values that female adolescents selected were level 5, and the least was level 1. Most of female adolescents had body dysphoria values at level 2, eight of them were at level 3, three of them were at level 1, and two of them were at level 4 and 5. All of fifteen female adolescents who had body dsyphoria values at level 2 were normal weight. Two over weight female adolescents had body dysphoria values at level 3. There were two female adolescents had body dysphoria values at level 5. The characteristic of two female adolescents were both of them had BMI in the normal level and one of them did not satisfy with her body in all parts and wanted to loose her weight. This study also found that body dysphoria values did not correlate with BMI of female adolescents. BMI of female adolescents who had high body dysphoria values did not obvious different from female adolescents who had lower body dysphoria values. The interesting point was no female adolescents had body dysphoria values at level 0 because no one selected the same cards in two times selection. It seemed that no one satisfied with their current body sizes.

Table 13: Body dysphoria values in 30 female adolescents

Body dysphoria values	Number of female adolescent
0	0
1	3
2	**15**
3	8
4	2
5	2
6	0
7	0
8	0
total	**30**

When interviewing female adolescents about the perception toward their current figure, most of them perceived that they were overweight or fat. They gave many reasons

"Oh! I see all of my parts of body are too big, such as abdomen, buttock, hip, and leg". Or *"I go to Siam square, you know the owner said that I did not have size for you. I felt nervous".* Or *"You know you are successful when you can look in the mirror and instead of asking what wrong with it? And say there is nothing really wrong with me".* (Interview number 1, 3, 5, and 23)

One female adolescent perceived that she was normal weight but she still did not satisfy with her shape because she thought that some parts of her body were too big. She mentioned that

"I know, I have normal weight but you know I do not like my body. I like my body to be fit and firm like Hally Berry". Or *"When I meet people for the first*

time, I am worried that they think about how I look. You know before going out, I have to make sure that I look as good as I possibly can". (Interview number 3)

4.4 Sociocultural factor

Female adolescents thought that obesity was more in the social's opinion than medical criteria. This was because we could decide obese or non-obese people from the feature clearly, such as big hip, big buttock, big waist, big arm, big leg, and big thigh. They also could evaluate by social stream that if women's shape was different from other shapes in the society, it means they were fat.

In medical criteria, body mass index values (BMI) was used to measure one who was obese or not. Most of female adolescents gave the idea that this measure just liked the ideal standard to assess health more than fat situation.

Social factor was the important factor in setting the shape of female adolescents by defining obesity instead of technical. There were four groups of social factor influencing them. First group was peers, such as close friends. Second group was mass media, such as television and fashion magazine. Third group was family, such as parent, brother, sister. And the last group was lover.

Most of female adolescents wanted their figures to be looking good. They perceived toward their figures in negative. After they received negative critic from others, body dissatisfaction and lower body image would be increased in their minds. Then they would try to do everything to improve their shapes because they needed the people saw them look good. Most of them believed that other people had a good sense in their shapes especially from their friends. Because friends especially boyfriends usually criticized women's figures and knew what shapes that women should be. After their boyfriends told female adolescents that they look fat or chubby, they would worry about their negative perception primary in their minds. After they received the negative critics

or teasing, they felt worry about it. Most of them did not satisfy with their shape and tried to improve their figures by seeking many ways to reduce their weight. The main finding shows that after female adolescents received the critics about their figures in normal healthy, they felt suspicious in those critics and did not believe about them and tried to reduce their weight in every method to recall their confidences back. However, one female adolescent told that she was not worry about the critics, she reduced their weight when they needed only. It was up to their minds. She said that

"I do not care about these critics, I loose my weight because I can not wear my garment". (Interview number 27)

In the view of parent, one of female adolescent said that her parent did not agree with thin women because it means puberty or did not have money to buy some food. However, most of them believed that after their parent or relative told that they were fat or chubby, they would give an importance to it. Because they thought that these critics were sincere warning and they were true. In case of the lover, most of female adolescents who had boy friend did not pay an attention about lover's critic. Because female adolescents kept the company with their lovers by mental not physical. So they thought that the teasing or critic from their lover was just kidding, not serious, not important and not influencing them used anti-obesity drug to reduce their weight. Most of them believed in critic or teasing from their friends and families more than their lovers.

In case of the mass communication and fashion magazine, nowadays, they played the role more than in the past. This study classified mass media and fashion magazine as the social factor because both of them could influent female adolescent to use anti-obesity drug. This was because they cast on television and radio eventually in the fashion magazine occupied their perception in the way of fashion which full of the very thin models. These played the role in communicating to female adolescents to

create ideal body image that they needed to be. From this reason, they needed to have the shape like those models in the media.

In conclusion, this study shows that female adolescents received an influence from peers, media, family, and lover. Teasing and critic from friends and media were the most sociocultural factor affecting female adolescents' body image satisfaction.

4.5 Source of anti-obesity drug information influencing anti-obesity drug usage

Most of female adolescents said that they received anti-obesity drug information from their friends who noticed the change of their bodies. They found their friends look better from using anti-obesity drug. First, female adolescents gained much information about anti – obesity drug from their friends who succeed from using the drug. Female adolescents who started to use anti-obesity drug at early adolescents, their female friends at the same school were the major sources. In the other side, female adolescents who still used anti-obesity drug in continuity until today and started to use the drug after graduating, female friends from work were the major sources. Female adolescents mentioned that mass media, such as television, radio, and newspaper did not have an importance to their decision because these media did not give the information about anti-obesity drug to them. There was no information about the usage of anti-obesity drug from the television. Most of them mentioned that

> *"I never know anti-obesity drug before. I have never known it from television or others, I know it from my friends".* (Interview number 1, 2, 5, 6, 8,10, 11, 12, 27, and 29)

However, there were only two female adolescents ever saw anti-obesity drug information from fashion magazine and poster at the hospital and diet clinic.

We could conclude that female adolescents received anti-obesity drug information and decided to use anti-obesity drug from their close friends who succeed from reducing their weight by using the drug.

4.6 Perception toward anti-obesity drug usage: the perceived consequence of anti-obesity drug usage including drug efficacy, drug side effect, and drug satisfaction

Using anti-obesity drug was the most popular among female adolescents. They said that it was very easy and fast if compared with other methods. They did not have to force themselves not to eat their favorite food. Moreover, anti-obesity drug was cheaper than the others, such as liposuction or dietary supplement. They did not concern about side effect from using anti-obesity drug even though they felt tired or weak. They still used this way instead of physical exercise or limiting food because they perceived in their mind that anti-obesity drug usage was fast. At first time, most of female adolescents perceived anti-obesity drug information from their closed friends who succeeded from using it. Less of them perceived anti-obesity drug information by themselves, such as from poster in front of the clinic and hospital.

4.6.1 Perception toward the efficacy of anti-obesity drug usage

When asking about the efficacy of anti-obesity drug, most of female adolescents satisfied with its efficacy. Because the result of anti-obesity drug could lose their weight faster than other reducing weight methods, such as limiting food, fasting, physical exercise, and using dietary supplement clearly. One of them said that

> *"I think anti-obesity drug usage was suitable for me because I am the type of indiscipline people. You know I have tried to use all methods that I can but it dose not work for me".* (Interview number 12)

Most of female adolescents satisfied especially in the first period of anti-obesity drug usage. They gave the reason that in the first period of drug usage, their body did not know the drug so their body would more respond to drug efficacy than in the second or the third period of drug usage. One of them said that *"First two week you know my weight is reduced almost five kilograms but after that it can not"*. The efficacy of anti-obesity drug usage was highest in the first period after that their weight would be higher again. In addition, there was no female adolescent did not satisfy with anti-obesity drugs' efficacy.

4.6.2 Perception toward anti-obesity drug side effect

Most of female adolescents accepted that they had known about drug side effect before using anti-obesity drug. But they did not know exactly syndromes. Then we asked about side effect after taking anti-obesity drug, most of them knew side effect from using anti-obesity drug but they could not exactly tell the syndrome. But most of them satisfied with the result from using anti-obesity drug more than side effect. From the interview, most of female adolescents could answer about side effect from using anti-obesity drug. Most of side effects were irritate, heart palpitation, depression, sleep disturbance, weakness, tired, gastrointestinal disturbance, sweating, dry mouth, dispirit, could not concentrate, mental disorder, mouth odor and body odor. Heart palpitation and irritate were the most side effect, which female adolescents often met. Each of female adolescent received drug side effect in different level. Twenty three of them kept on using drug because they could tolerate drug side effect and wanted to be thinner. However, seven of them could not tolerate these side effects and stop using it. In addition, one of female adolescent encountered with mental disorder. She said that she paid respect to clock tower because she thought that the clock tower was similar to

someone she had known before. After this circumstance, she stopped using anti-obesity drug. She said

"After I use it, it is ok especially in the first period but in the last period you know, one day I respected to the clock tower. I thought it was my colleague".

(Interview number 29)

After that she stopped using it. In the other side, one of them said that they never encountered with drug side effect.

One interesting point that should be considered was female adolescent who had knowledge concerning about anti-obesity drug would less encounter with drug side effect than the others. One female adolescent was pharmacist. She knew about the feature of anti-obesity drugs that the doctors prescribed to her so she took only the drug that she needed. In this study found that she took only anti-obesity drug in the group of psychotropic substance or prescription anti-obesity drug. The remaining drugs were thyroid drug, diuretic agent, and laxative. Because she wanted only anti-obesity drug that could not make her eat, moreover, she did not wish to suffer from many side effects of other drugs. In the other side, female adolescents who did not know about the drugs before, could not avoid and select anti-obesity drug that the doctors prescribed. So female adolescents in this group could come up against many side effects from anti-obesity drugs.

Moreover, most of female adolescents who still used anti-obesity continuously realized that they would receive harm from drug side effect. The important reason was they overcame from drug side effect for slimmer result that they needed. One of them said that she used anti-obesity drug unsystematically. Because she could not bear drug side effect from one doctor but she could bear in another doctor. However, one of them stopped using anti-obesity drug because she could not tolerate with severe drug side effect especially the side effect that affect to her mentality.

4.6.3 Anti-obesity drug satisfaction

Most of female adolescents satisfied with anti-obesity drug especially drug efficacy. One of them said that

"At first time, I know the drug from my friend. You know her body is changed. I ask her what are you doing, she said that she is using anti-obesity drug. After that I try to use it and you know it work for me, I loose seven kilograms during two weeks". (Interview number 12)

Fast result was the most drug efficacy that they satisfied.

When asking about cost of anti-obesity drug, Most of female adolescents satisfied with it. One of them said that

"I think it is not expensive, you know I ever used dietary supplement. It is about 4,000 baht per week. I think drug cost is ok". (Interview number 12)

The drug cost was around 150-500 bath per week and the period of treatment around 4-8 weeks so total cost around 600-4,000 bath not including the doctors service charge.

When asking about the worth of anti-obesity drug, most of female adolescents said that it was worthy. One of them said that she paid 150 baht per week for 8 week and she could lose her weight from 60 kilograms to 45 kilograms. She satisfied with the result and said that it was worth the expense. Most of them said that anti-obesity drug was cheaper than using dietary supplement. Because the total cost of dietary supplement was around 800-12,000 baht per month and it took a longer times to reduce their weight. However, one female adolescent said that anti-obesity drug was not worthy and very expensive because she could not attain their objective. She paid 500 baht per week for 8 week. She could lose her weight about five kilograms in the first period but in the second period her weight had fluctuated. She thought that it was not worthy for 4,000 bath that she paid.

Regarding the transaction cost, such as transportation cost, Most of female adolescents said that it was not expensive and did not obstruct them from having the treatment, because they could catch the bus in Bangkok which was very cheap.

In conclusion, most of female adolescents seemed to satisfy with anti-obesity drug efficacy more than anti-obesity drug side effect because they could not change the perception toward their demand for beauty.

CHAPTER V

DISCUSSION

The objectives of study were to investigate behavior of anti-obesity drug usage, to identify the reasons behind anti-obesity drug usage, and to explore the perceived consequence of anti-obesity drug usage including drug efficacy, drug side effect, and drug satisfaction among non-obese female adolescents in Bangkok. The details of discussion part were described as follows:

5.1 Behavior of anti-obesity drug usage

We could see that female adolescents used many methods to reduce their weight, such as limiting food, fasting, and physical exercise. From trying to use many ways, they could know the strength and weakness of each method, such as fasting would make them starve and was difficult to do, physical exercise was good method for health but it took a long time, moreover, female adolescents could not exercise everyday. In anti-obesity drug usage, female adolescents perceived that this method was advantage on faster than other methods, furthermore, it was suitable for people who were not success from using other methods. This study was consistent with one study (Daniel, 1998). This study found that harmful weight loss practices were found to be common at all grades and success levels of high school students especially fasting and anti-obesity drug usage methods. They thought that these methods make them reduce weight rapidly. Before female adolescents decided to use anti-obesity drug, they saw the advantage on drug usage from their friends. They directly found their friends had good figures in short period by using drug. In addition, they also knew about side effect of drug but they still

decided to use it because they did not know exactly drug side effect until they used it. This was the important factor that motivated them to decide to use anti-obesity drug.

If we take a look in the behavior of anti-obesity drug usage among female adolescents, we found that the usage was inconsistent with medical aspect. This result was consistent with one study. Pacharapaisarn (2002) found that 84% of non-obese females used anti-obesity drug for beauty more than health concern. From medical aspect, the objective of anti-obesity drug usage was for health rather than cosmetic concern. The cause of this reason came from internal factor, such as from body dissatisfaction and external factor, such as teasing from friend and influencing from media. They used anti-obesity drug to improve their appearances, to receive attractive from opposite sex, and for socially accepted. Although most of them succeeded from using drug, they did not know drawbacks that might appear to them in the future. Their figures were changed in good ways but most of them did not know that anti-obesity drug could affect to them. Anti-obesity drug had many side effects that could affect to physical, mental, and society of users, moreover anti-obesity drug could affect to the country level. Because nowadays, anti-obesity drug could not produce in domestic, all of them came into Thailand by importing (Thai FDA, 2002). So if female adolescents still used anti-obesity drug in wrong attitudes, the country would lose budget to serve their attitudes. In fact, weight-loss medications might be appropriate only for selected patients who were at significant medical risk because of their obesity. WHO declared that anti-obesity drug was not recommended for using by people who were not obese. Anti-obesity drug was suitable for obese people and over weight people who had health problem from their weight.

Most of female adolescents began to use anti-obesity drug at the age of adolescents especially in middle state of adolescent including in the late of high school and the first period of university. This study was consistent with some study. Jordan

(2001) found that in Sao Paolo, three-fourths of the women aged 20 who wanted to lose weight were taking anti-obesity drug.

Regarding knowledge, most of female adolescents did not know many details of anti-obesity drug, such as drug name, drug type, and its action. There was only one of them knew some details of anti-obesity drug because she was a pharmacist. If female adolescents knew some detail of anti-obesity drug. May be severe side effect from drug usage would not occur. It was consistent with a study of Pacharapaisarn (2002) who found that women who received service from diet clinics, less of them know about anti-obesity drug knowledge especially drug action.

Regarding follow up of drug usage, most of female adolescents strictly obeyed and believed the advices from their doctors because they afraid of severe side effect and need the good result.

Regarding consistency in seeing doctor, most of female adolescents did not visit their doctor every time after making the appointment. They just bring the drug back with out diagnostic. In medical aspect, it was not true because the patients must visit their doctors every time before receiving the drug and the doctors must diagnose their patients every time before prescribing the drug. This study was consistent with some studies. Daoduong (2002) found that most of women went to see their doctors only the first time, after that they just bring the drug back. Pranpreecha (1997) found that doctors did not examine their patients every time after making the appointment. The doctors might be absent. In addition, this study also found that some female adolescents did not received anti-obesity drug from their doctors. In legal, anti-obesity drug in the group of psychotropic substance schedule 2 could be distributed and sold only by doctor that had the license. It means that the smuggling of anti-obesity drug still occurred.

Many female adolescents encountered with a lot of side effect, such as heart palpitation, dry mouth, weakness, tired, sleep disturbance, sweating, annoyance, mouth odor and body odor. Moreover, they could receive side effect from the combination

dosage, such as laxative drug, diuretic agent, thyroid drug, dietary supplement, and lipid drug, which could affect to their health, such as diarrhea, dehydrate, sweating, and fever. From medical criteria, not anyone encountered with severe side effect because sever side effect that could occur to the patients were myocardial infarction, primary pulmonary hypertension, and paranoid psychosis (Thammaweerapong, 2004). Most of female adolescents neglected all of these side effects because they saw the success from using drugs only. This result was consistent with some studies. Jordan (2001) found that 86 % of women from Sao Paolo had experienced side effects, but had not told their doctors about them they were afraid that the doctors would revoke the prescription. If we take a look in the reason behind stopping drug usage, we found that most of them satisfied with their weight at that time. It was consistent with one study. Sanaa (1999) found that most Saudi hospitalized phychiatric patients thought that they would stop their medications when they felt better about their weight. Less of them could not tolerate severe side effects of drug after long time usage over one year. There were many of them came back to use it again after could not tolerate with drug side effects because they were chubby again and they perceived themselves that there were no way to reduce their weight faster than they needed like anti-obesity drug usage.

Regarding doctor' s prescribing, all of doctors prescribed anti-obesity drug in the group of psychotropic substance schedule 2 or prescription anti-obesity drug combined with other drugs, such as laxative, thyroid drug, diuretic agent, to increase the efficacy of dosage. It was different in each diet clinic and private hospital. This pattern was similar to the combined or cocktailed drug. This finding was consistent with the information from Thai FDA (Thai FDA, 2002). Moreover, this study also found that many private hospitals and diet clinics had anti-obesity drug formulation almost 20 formulas by not approved from concerning organization. This result was inconsistent with one study (Jordan, 2001).This study found that there were other drugs prescribed in combination with prescription-anti-obesity drugs to speed up weight loss, such as

thyroid drug, tranquilizers, diuretic agent, and laxative drug. But in Brazilian law, these mixtures were prohibited. By law, there was no concerning organization to control the doctors' prescribing. The interesting point that we should consider was about the period of drug prescribing. If we take a look in this study, we found that one female adolescent ever used anti-obesity drug over short period. She used drug over 2 years. It was inconsistent with Bray's study. He found that if anorectic drugs were to be used at all, they should only be given for a short time during 2 to 6 months. Long term use could be justified on theoretical and practical grounds to prevent weight regain (often referred to as weight maintenance), but we need more data on efficacy and safety before we could be categorical about recommending continuous treatment for over a year (Bray, 1993). The cause of this problem was similar to the problem of drug prescribing. There was no obvious regulation from concerning organization to point out the correct period of anti-obesity drug usage to the doctors.

5.2 Demographic factor

In this study, all of demographic features played less important role in influencing anti-obesity drug usage among non-obese female adolescents.

Body mass index values(BMI) had traditionally been considered to be the best metric to determine whether or not human was overweight. However , as population differences in BMI were evident across ethnic groups, like female adolescents. It was unlikely that there were any direct biological contributors to body image problems. However, given that body weight and shape had a strong genetic basis and that heavier body weights and shapes were seen as socially undesirable especially for female , BMI might well acts as an indirect biological

contributor to negative body image. In this study, we used BMI values not more than 29.9. From the result, we could categorize female adolescent into two groups by using BMI values. First group was female adolescents who had BMI value in the range 18.5 to 24.9. Female adolescents in this group were normal weight. Second group was female adolescents who had BMI value in the range 25.0 –29.9. Female adolescents in this group were overweight. Surprisingly , overweight and normal weight female adolescents were aware of societal bias against fat people and will frequently express this bias themselves. Furthermore , both of two groups appeared to be unhappy with their weight and their body. Both of them had low body image , body esteem and also expressed the wish to be thinner. This study found that behavior of anti-obesity drug usage was not different among this group. Because twenty eight female adolescents were normal weight. Only two of them were overweight. Body image dissatisfaction, teasing from social factor, and behavior of anti-obesity drug usage were not obviously different among this group. So body mass index was not the important factor influencing female adolescents to use anti-obesity drug. This result was not consistent with other studies. Mendelson and White (1985) reported no self- esteem differences between overweight versus normal weight 8-year olds, although differences did appear by early adolescents. But in this study , all of overweight and normal weight female adolescents had low self esteem, the correlation between BMI and body esteem was probably created by some variable: societal attitudes toward obese people. Obese people were not inherently more prone to psychopathology or poor mental health. It was also consistent with Levine and Smolak's argument (Levine et al., 1994; Smolak and Levine, 2001) that the "thinness schema," a cognitive structure integrating thin – ideal, body dissatisfaction,

and weight control techniques, might be concerned with adolescents especially in female adolescents. Thus BMI and body dissatisfaction relationship demonstrated the importance of charting changing patterns in the development of body image. Moreover, Wardle and Johnson (2002) surveyed a large sample of British adults about their current and ideal weights, evaluation of their weight (i.e., "very underweight" to very overweight) and used of weight control strategies. While weight dissatisfaction was calculated as the discrepancy between one's current and stated ideal weight. There was a gender by weight interaction for the self - perception of being overweight; almost there quarters of overweight woman perceived themselves as being overweight. In an analysis of the percentage of women who evaluated themselves as overweight at each BMI levels, a pattern emerged indicating that at BMI levels from 22 to 28, women were significantly more likely than men to consider themselves overweight and to engage in weight loss attempts.

If we take a look in other demographic features, in level of education, the behavior of anti-obesity drug usage and reasons behind anti-obesity drug usage were not exactly different among female adolescents who were studying in bachelor degree, diploma degree, and vocational education. It was similar to BMI because psychological factor, teasing from sociological factor, and drug use behavior were not also show different during female adolescents who graduated in bachelor degree, diploma degree, and vocational education. Regarding occupation, behavior of drug usage and reason behind drug usage were not obvious different between all of these occupations. Female adolescents who were employees and officials did not play obvious different between drug use behavior. As for age, the aged group of female adolescents was during 20 to 25 years old. This study found that behavior of drug usage, body image and teasing from social were not different between this group. May be it occurred from the range of aged

group were not enough difference. This result was inconsistent with Bergstrom's study. He found that Swedish adolescents and young adults over estimate of body size in all age group especially in females. Smolak (2003) found that age was the important factor that played the important role to body image dissatisfaction and influenced female adolescents to loose weight. In addition, this study found that body dissatisfaction, and weight control techniques might be less consolidated in younger children than in adolescents. Regarding income per month, most of female adolescents had average income per month around ten thousand baht. Only two female adolescents were the out liners. The behavior of anti-obesity drug usage was not obviously different in this group. In lover aspect, anti-obesity drug use behavior and reason behind drug usage were not different between female adolescent who have and did not have lover. There was only two female adolescents that their lovers support anti-obesity drug usage but it was the little portion. Regarding history of heredity, most of female adolescents who had over normal nutrition, had the same over normal nutrition as their family, such as parents, brothers, and sisters. In the other side, female adolescents who had normal nutrition, also had and did not have the history of heredity in the over normal nutrition. So behavior of anti-obesity drug usage and reasons behind anti-obesity drug usage of this group was not obvious different. As for health history, most of female adolescents had no disease. Because all of them were adolescents. There was only one of them was in a high triglyceride and cholesterol level. But the usage of anti-obesity drug was not concern with this symptom because it occurred after she used anti-obesity drug. So this factor also not concerned with behavior of drug usage.

In conclusion, all demographic factors, such as age, body mass index, allowance per month, level of education, occupation, history of heredity, health history, and lover were not the important factors influencing the behavior of anti-obesity drug usage. It was consistent with a study of Chanmanee (1994) found that there was no relationship

between age, body weight, educational status, occupation and the use of anti-obesity drug.

5.3 Psychological Factors

Adolescence was a period of life marked by pronounced physical, psychological, emotional, and social changes. The physical changed that characterize this life stage had been implicated as a trigger for body image problems in both males and females. Boys typically experienced positive feelings toward their – changing bodies because of the increase in muscle mass, which might be socially beneficial. In contrast, girls generally became more dissatisfied with their bodies following puberty in part because of increased body fat which conflicted with the cultural ideal of a slender body. It stands to reason that excess body weight might have a negative impact on the well-being of the female adolescents.

The main findings of this study found that most of female adolescents were overestimations of their body size. In this study, there were no female adolescents selected the same cards in two times selection. It revealed that no one satisfied with their current body size. All of them preferred figure that was slimmer and thinner than in present. These results corresponded to the general assumption that feeling too fat was a common feature in young people today. In the interpretation to the results, it was important to consider that the concept body perception or body image was complex and multidimensional. The concept was first introduced by Schilder (Schilder, 1935), who defined it as

"*The picture of our own body, which we form in our mind, that was to say, the way in which the body appeared to ourselves."*

In their review of body image in children and adolescent, Offman et al. (Offman, 1992) quoted Swensen (Swensen, 1959-1966):

"Which measure is a true index of a person's image of his / her own body? Is it a photograph or a verbal self – description or is the body image a function of the interaction between a person's physical appearance and his self-concept? Or is it something else, or some combination of something else? "Garner et al. (Garner, 1981)

In our present study, we found considerable overestimatations of body size in the majority of the subjects. On the other hand, this finding was consistent with other results showing that body site estimations techniques tended to show overestimations of body size and body dissatisfaction of female adolescents. Matsuura (1992) found that female adolescent tended to be thinner because of increasing body sized dissatisfaction. Almost female adolescents had low body satisfaction. It means that lower level of body satisfaction was associated with lower self-esteem among female adolescents. This finding was also consistent with Kostanski (1998). This study found self-esteem to be more strongly associated with perceived body image dissatisfaction than actual body mass. Interestingly, these researchers found actual body mass and psychological well-being to be independent, but both significantly correlated with perceived body image dissatisfaction. According to the concept of self – schemas, negative feelings toward the body were likely to be a source of negative emotions and attitudes toward the self, which might manifest in feelings of low self – esteem.

In this study, all female adolescents who had body dissatisfaction and low body image would seek residential weight – loss treatment including anti – obesity drug. It was consistent with Rasheed's study. He found that Arab females who perceived themselves overweight would express dissatisfaction with their weight status and desired to lose weight. Story (1997) found that in all ethnic groups, such as African-American, Hispanic, Native American, and Asian-American girls, dieting was associated with weight dissatisfaction, perceived overweight and low body image. Furthermore, Rasheed (1998) also found that Western thin body image was clearly obvious in a subgroup of normal-weight female (37.5%) who expressed dissatisfaction with their weight status and wished to lose weight in many methods. So it could propose that body – image dissatisfaction might be one factor that influencing female adolescents to use anti- obesity drug.

The important thing that must be considered was the role that body image distress played in motivation for heath behavior change. It was possible to claim that psychological and social fallout from obesity, including body image problems, social stigma and discrimination created negative states that female adolescents would relieve by losing weight. They would seek many reducing weight methods including fasting, physical exercise, dietary supplement, and anti-obesity drug to loose their weight. Almost female adolescents tried to use all of reducing weight methods and they would select the one that were the most efficiency for them.

We can summarized that the relationship between body dissatisfaction, self – esteem, and behavior change required attention in research.

5.4 Sociocultural factors

Culture and society played a major role in the construct and hence the development of body image. From the result of the study, sociocultural factors that influencing female adolescents to use anti-obesity drug were media, peers, parents and lover, moreover, these factors might create some details of female adolescents' body image.

5.4.1 Peers

This study found that peers were the important sociocultural aspect influencing female adolescent to use anti-obesity drug. Most of them were directly teased by their friends especially in male. In direct, they would receive critic from their friend, such as look chubby or look weight regain. In Indirect, female adolescents would perceive that most of friends especially in male often appreciated the women who looked thinner and slimmer than them. From these critics, most of them did not satisfy with their body image and wanted to loose their weight. May be social comparison appeared as a factor by very early elementary school and played the active when the children were growing up. As the age of adolescents especially in female adolescents, the comparison between their groups could not avoid. This was probably one reason why female adolescents were aware of whether they were overweight and why felt badly about it. It probably contributed to female adolescents' awareness of the negative stereotypes concerning body shape might affect female adolescents' body esteem. Furthermore, female

adolescents' friends especially in the group of males appreciated in the women who had thinner body than them. Body dissatisfaction could occur. Female adolescents believed that they would be better if they were thinner that it was consistent with some studies. Taylor et all (1998) reported that fourth and fifth grade girls who thought peers would like them better if they were thinner had higher weight concerns.

In conclusion, peers played the major rules as socialize. Both direct and indirect teasing from friends were important especially in the adolescents. In this study, teasing of closed friends about weight and shape might also influence them to find many reducing weight method to loose their weight including anti-obesity drug wage.

5.4.2 Media

Media might indirectly impact women's body image, which could lead to unhealthy behavior as women and girls strive for the ultra – thin body idealized by the media. From the result of this study, the important media that played the role in leading female adolescents to have low body image and used anti-obesity drug were advertising media in television and fashion magazines. Advertisements emphasized thinness as a standard for female beauty, and the bodies idealized in the media were frequently atypical of normal, healthy women. Female adolescents frequently compared their bodies to those they saw around them, and exposured to idealized body images lowers women's satisfaction with their own attractiveness. This study was consistent with other studies. One study found that people who were shown slides of thin models had lower self-evaluation than people who had seen average and oversized models (Levine and Smolak, 1996). Field (1999) found that adolescent girls in the school were

unhappy with their body weight and shape. This discontentment was strongly related to the frequency of reading fashion magazines and also found that the frequency of reading fashion magazines was positively associated with the prevalence of having dieted to lose weight. Dissatisfaction with their bodies caused female adolescents to strive for the thin ideal. Depicting thin models might lead female adolescents into unhealthy weight-control habits, because the ideal they seek to emulate was unattainable for many and unhealthy for mast. In the other side, depicting thin models appeared not to have long term negative effects on most female adolescents, but it affected female adolescents who were already have body-image problems. Female adolescents who were already dissatisfied with their bodies showed more anxiety and used many reducing weight method including anti-obesity drug. The process by which media influencing body image remained unclear. A few theoretical frameworks strived to explain how media images could influence women's body image, and were useful in interpreting current finding. From the result of the study, the media stimulated, reinforced, and reproduced an objectifying gaze through its portrayal of interpersonal social interactions, and its focused on women's bodies and body parts. People were socialized to view women and their bodies as objects that needed to be corrected and molded into the acceptable social norms.

5.4.3 Parents

This study found that less female adolescents received negative comments from their parents. Most of their parents preferred female adolescents to have good health more than slim. But some female adolescents who received comments might learn

certain elements of body image from their parents because they perceived that teasing from their parents were true and sincere. Parents selected and commented on female adolescents clothing and appearance, and many required the female adolescents to look certain ways and to eat or avoid certain foods. Furthermore, many parents did comment on their female adolescents' weight, noting, for example, whether the children were too fat or too thin. If their children were too fat, they might actively encourage their children to slim down.

Parental comments did appear to be related to female adolescents' body image, similar to some studies. Thelen and Cormier (1995) reported a significant correlation between the parents' reports of their encouragement to their daughters to lose weight and their daughters' desire to lose weight. Moreover, parental teasing and comments about appearance were more related to female adolescents' body dissatisfaction and influenced them to be thinner by using many reducing weight method including anti-obesity drug. Perhaps female adolescents also received the message form multiple sources such as peers, parents, and media but the parents were the closest people so the consistency of the messages might result in their internalization among female adolescents, which might make them susceptible to parental comments. Thus it was possible that parents' attitudes and beliefs concerning weight, and body shape directly influencing their adolescents' body image concerned.

5.4.4 Lovers

Less female adolescents in the study reported receiving negative comments from current lovers or partners regarding their bodies. Female adolescents who received

comments from their lovers were consistent with the idea that relationships mediated the sociocultural context, finding showed that it was not the nature of the comments but rather the female adolescents' interpretation of their meaning that influenced her body image. This study also found that lovers could influence female adolescents' body image positively and negatively through their comments, and indirectly through female adolescents' perceptions of her lovers' preferred body shape and size. Lovers' negative comments could damage to female adolescents (Levine and Smolak, 1996). This way was due to female adolescents' apparent need for inter personal attraction and for finding and retaining a life partner. Women's appearance was more important than men's appearance with regard to marital satisfaction, quality of sexual relationship, and that marital satisfaction had been associated with body satisfaction. In the other side, lovers' positive body comments, it was the messages that cheered up to female adolescents. Almost of female adolescents believed in their lovers' comment. If their lovers appreciated current female adolescents' figures. Positive body image and body satisfaction would occur. So men's comments played the important role for behavioral change in female adolescents especially in lovers' negative commented.

We could conclude that peers, family, lovers and media were the sociocultural factors that played the important role to develop body image dissatisfaction and low self-esteem. In this study, peer and media were the most often the perpetrator of teasing and criticism in female adolescents. It was apparent that negative verbal commentary from peers and media resulted in body image dissatisfaction.

5.5 Source of anti-obesity drug information influencing anti-obesity drug usage

This study found that friends who succeeded from using anti-obesity drug were the major sources to induce female adolescents to use the drug. It was consistent with a study of Daoduong (2002) found that friends played the most important source to induce the women to use anti-obesity drug. It seemed that these sources showed positive comments to anti-obesity drug usage and also guaranteed the efficacy of drug. Because after female adolescents perceived that their friends' bodies changed in good ways by using the drug, most of them need to try to use it. On the other hand, most of female adolescents did not know anti-obesity drug information, such as feature, benefit, drawback of anti-obesity drug form mass media, such as television, radio, newspaper and poster. It revealed that female adolescents perceived only positive comments from using anti-obesity drug and then they decided to use the drug. If mass media played important roles to show the negative feed back to anti-obesity drug usage, the trend to use anti-obesity drug would change. The number of anti-obesity drug usage might decrease.

5.6 Perceived consequence of anti-obesity drug usage

The perception of using anti-obesity drug among female adolescents came from the information and the experience of their friends. Moreover, if they saw the success of their friends from using the pills, they would have more confidence in the efficient of the drug. It means that the friend factor which succeeded in the usage was guarantee in the result of their usage too. They clearly understood that this method could help them

eradicate their over weight faster than the others, such as limiting food, fasting, and physical exercise. Most of them knew about side effect and dangerous of the usage. However, this information did not restrain them to using it. This usage showed the weakness of their mind to appetite for beauty and abandoned in the science knowledge. Including the former users who came back to use again because of their weight increased, they satisfied with the efficacy of drug which helped them losing their weight fast. The interesting point was that, although they knew side effect of anti-obesity drug both in physical and mentality, they still came back to use it because of they could not delete the perception toward beauty that the social depressed to them. It revealed that they satisfied with drug efficacy more than interested in many drug side effects. Together with the tardy and the inefficiency of other ways, such as limiting food or physical exercise in their perception made them using anti-obesity drug. Nowadays, there were many diet clinics open around Bangkok and many more waiting for the license. All of them paid the drugs which had side effect to the psychology and if the users took the drug for a long time, they might have the harm to their body till the death.

We could conclude that perceived consequence toward anti-obesity drug usage that played the most important roles influencing them to use anti-obesity drug was fast result of its efficacy. In addition, almost of female adolescents knew many side effects of anti-obesity drug but they still used it because they perceived that anti-obesity drug usage was benefit to them.

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CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

The objectives of the study, the behavior and reasons behind anti-obesity drug usage among non-obese female adolescents in Bangkok, are to investigate behavior of anti-obesity drug usage, to identify the reasons behind anti-obesity drug usage, and to explore the perceived consequence of anti-obesity drug usage including drug efficacy, drug side effect, and drug satisfaction among non-obese female adolescents in Bangkok. The findings of this study can create many ideas to improve behavior of anti-obesity drug usage among non-obese female adolescents. This study was based on qualitative research method. In-depth interview was used to collect deep details from informants. Subjects were 30 female adolescents aged 18-25 years old. Twenty five female adolescents have ever used anti-obesity drugs before. The rest are currently using the drugs.

6.1 The behavior of anti-obesity drug usage

The purpose of anti-obesity drug usage was inconsistent with medical aspect. They used the drug for beauty or cosmetic more than health concern even though most of them were in normal weight level and did not have any symptom from obesity.

Female adolescents began to use anti-obesity drug at middle period of adolescent. They knew many details about anti-obesity drug from their closed friends who had succeeded from using it. They strictly obeyed and believed advices from doctors because they need to be success and were afraid of side effect. Many female adolescents encountered with side effects. Heart palpitation and annoyance were the

most side effects that they received. Severe side effect that they could not tolerate was mental disorder.

We found that the doctors prescribed anti-obesity drug in pattern of combination. They prescribed anti-obesity drug in the group of psychotropic substance combines with other drugs to increase the efficacy of drug dosage. Nowadays, there is no obvious regulation to control prescribing behavior from doctors. May be the patients will receive variety side effects from doctors' prescribing. Doctors should follow certain restrictions when prescribing many weight loss medications. Patients might acquire more side effects from doctors' prescribing.

6.2 The reasons behind anti-obesity drug usage

The main factors that influencing them to use anti-obesity drugs came from internal reason, such as did not satisfy with their body image and, from external reasons, such as saw the success from their closed friends and teasing from their friends.

6.2.1 Psychological factor: Body image

The main findings of the study showed that all female adolescents were not satisfied with there current body size and most of them were overestimate of body size. Low body dissatisfaction occurred, moreover, body dissatisfaction was associated with low self-esteem. So it revealed that female adolescents, who had low self-esteem inside, will encounter with feeling of body dissatisfaction. Both low self- esteem and body dissatisfaction were the main causes of body image dissatisfaction. Most of female adolescents had body image dissatisfaction although they were not obese. After they encountered with body image dissatisfaction, they would find many ways to reduce their

weight. It could be proposed that body image dissatisfaction might be the important factor that influencing them to use anti-obesity drug.

6.2.2 Sociocultural factors

Sociocultural factors, which induced female adolescent to use anti-obesity drug were peers and media. All of them played the important role to develop body image dissatisfaction and low self- esteem. High level of direct teasing especially from closed friends influencing them to encounter with body image dissatisfaction despite that all of them were not obese. It was conclude that sociocultural factor would increase body image dissatisfaction and led them to find many ways to loose their weight including anti-obesity drug usage.

6.3 The perceived consequence of anti-obesity drug usage

Perception toward anti-obesity drug usage among non-obese female adolescents came from information and experience from their closed friends. After that the perception toward drug usage came from experience of drug usage from themselves. All of them knew about side effect and harm from anti-obesity drug before using them. But they still used them. This usage showed weakness of their minds to go on for the beauty and cosmetic concern and rejects in the science knowledge. Most of them perceived that anti-obesity drug usage was benefit to them, they satisfied with drug cost and drug efficacy especially loosing weight fast. The interesting point was that although they encountered with severe side effect, they still used the drug. Because they could not delete the perception toward beauty, which they need to be. Moreover, the perception toward inefficacy of other methods also promoting them to use anti-obesity drug.

6.4 Recommendations

The result of the study will be used as the baselines for improving and developing many ways and plans for controlling and preventing anti-obesity drug problems that may be occurred in the future.

6.4.1 Narcotic Control Division, Thai FDA

Narcotic Control Division, Thai FDA is the only organization that has duty to import, sell, and distribute anti-obesity drugs to the diet clinic and private hospital. It means that the regulations of anti-obesity drug usage are control by Thai FDA. But at present, the problems of anti-obesity drug usage still increase. So Thai FDA should set the obvious regulations, which are able to practice and solve these problems. Several recommendations are described as the follows.

6.4.1.1 Thai FDA should have measures to control and examine the smuggling of anti-obesity drug illegal.

At present, anti-obesity drugs are controlled by Thai FDA by using law called Psychotropic Substance Controlling Act B.E.2518. The patients can receive anti-obesity drug by their doctors who have the right license. So Thai FDA should find the ways to prevent the smuggling of anti-obesity drugs import illegal in many methods, such as selling the drug from direct sales to diet clinic and drugstore.

6.4.1.2 Suitable weight - loss methods should be promoted.

Regarding medical treatment, anti-obesity drug usage is not suitable for the people who have BMI values less than 30. This study found that all of female adolescents who used anti-obesity drug had BMI values less than 30. Most of them encountered with drug side effect. It is important that Thai FDA should promote and campaign the reducing weight methods that have the advantage to them, such as physical exercise together with limiting food.

6.4.1.3 The cooperation and coordination between Thai FDA and concerning organization

It is important that both government and private sectors should coordinate to campaign, publicize, and make the public relations more about anti-obesity drug information especially feature of drug, benefit, and drawback of drug by using a variety of mass media, such as television, radio, newspaper, poster, brochure, fashion magazine, and exhibition. Because the result of this study reveals that these mass media play fewer roles to provide many details about anti-obesity drug. In addition, Thai FDA that has direct responsibility in anti-obesity drug usage control should provide the knowledge and more information about anti- obesity drug regarding harmfulness by distributing many media, such as brochure, poster, television, and radio to the people in every level. Moreover, Thai FDA should coordinate with concerning organizations to examine and supervise the diet clinics and private hospitals for the purpose of following the regulation. The sustained examination and supervision are necessary because they can prevent the problems of anti-obesity drug in the long term.

6.4.2 The Medical Council of Thailand

At present, prescription anti-obesity drug is categorized in the group of psychotropic substance schedule 2. By law, it indicates that only the doctors who have licenses can prescribe the drugs to the specific patients. But nowadays, the problems of doctors' prescribing still increase because the doctors in many diet clinics prescribe anti-obesity drugs in various ways and various types. Furthermore, they also prescribe the drug inconsistency and not the same way. At present, the doctors bring many drugs combine together with prescription anti-obesity drug to speed up weight loss, to increase the efficiency of the result. But all of theses drugs have specific strength and dangerous so the users may be encountered to these drug side effects. The Medical Council of Thailand is the organization that has direct responsibility to look after and control all of the doctors to practice in suitable way. The Medical Council of Thailand should have obvious criteria to control and look after the patterns of doctors' prescribing to prescribe anti-obesity drug consistency and in the same way.

6.4.3 The doctors

The doctors who have the right license to possess anti-obesity drug in the group of psychotropic substance schedule 2 should be controlled in these details.

6.4.3.1 The doctor' ethic

The consideration of doctors is very important. In fact, after diagnostic, if their patients do not have BMI values more than 30 or during 25 and 30 but do not have symptoms that concern with obesity, the doctors should not prescribe anti-obesity drug to them.

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6.4.3.2 The advice of anti-obesity usage

After examination and curing remedy, the doctors should introduce and advice about many things after they prescribed the drug to their patients. They should explain more about drug features especially drug side effect because almost of anti-obesity drugs had the risk of severe side effect, which specific in each patients. The result revealed that almost of female adolescents did not have the important recommendations about anti-obesity drug usage from their physicians. They just knew the details of the drug usage from the labeling.

6.4.3.3 The consistency of doctors' diagnostic

In right principle, the doctors must examine their patients every time after making the appointment. It is very important because in the term of curing remedy, the doctors will receive many details of patients' symptom, will know the efficiency of drug that they prescribed, will know the procedures of patients' practice, and know the next method of curing remedy. Moreover, the consistency of doctors' examination will increase the relationship between them. The doctors can know the deep and important details about the treatment. In addition, the doctors should think about the medical ethics in their minds throughout the treatment. They should not see their patients especially in the time of severe side effect or changing the medication. In patient section, they will receive a lot of information about the treatment from the beginning to the end of the curing remedy. So the problems of anti-obesity drug usage will be decreased.

6.4.4 Parents

It can not refuse that parents are the most closed person to adolescents. The parents should increase their close and interesting especially when their children are in the age of adolescents. The parents should give the right advice, consult, and instill the right values in attitudes and perception toward weight and body issues. Social support from family as a protective factor against the development of body image disturbance.

6.4.5 Hotline Units

Thai FDA should create the unit or group of people to have the duty for giving the advice about anti-obesity drug usage for the people. May be Thai FDA should set the telephone line called "HOTLINE". It is necessary because the people can access the right anti-obesity drug information.

6.5 Limitations

Several limitations of this study were described as following:

First, this study was qualitative research and collecting data by using in-depth interview guide. In each time, the interview will take 1 to 3 hours. The rejection from the informants occurred.

Second, in this study, the researcher is a man, which can make some barriers to the samples in willing to join in this study.

Third, no coordination from doctors, who are the owners of the diet clinics.

Fourth, twenty five female adolescents stop using anti-obesity drug before interviewing so we can not directly see about the feature and pattern of anti-obesity

drug. Most of the details, such as drug types, drug side effects were received from asking their past experiences about anti-obesity drug usage.

6.6 Further Studies

There is a need to study and conduct the behavior of doctors' anti-obesity drug prescribing. Some of the problems of anti-obesity drugs usage come from the doctors' prescribing but no one ever conducts about this area including Thai FDA.

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APPENDICES

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APPENDIX A

Types and names of psychotropic tropic substance in Thailand

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Table 1: Types of psychotropic substance schedule 2

Psychotropic substance schedule 2	
Amfepramone*	Pemoline
Aminorex	Phenylpropanolamine
Butorphanol	Phencyclidine
Brotizolam	Phendimetrazine
Cathine*	Phenmetrazine
Ephedrine	**Phentermine***
Estazolam	Pipradrol
Fencamfamin	Pseudoephedrine
Fenethylline	Quazepam
Flunitrazepam	Secobarbital
Flurazepam	Temazepam
Haloxazolam	Triazolam
Ketamine	Zaleplon
Loprazolam	Zipeprol
Lormetazepam	Zolpidem
Mazindol*	Zopiclone
Methylphenidate	
Mescocarb	
Midazolam	
NEthylamphetamine	
Nimetazepam	
Nitrazepam	

(Thai FDA, 2002)

* Psychotropic substance schedule 2 that the doctors frequently prescribed.

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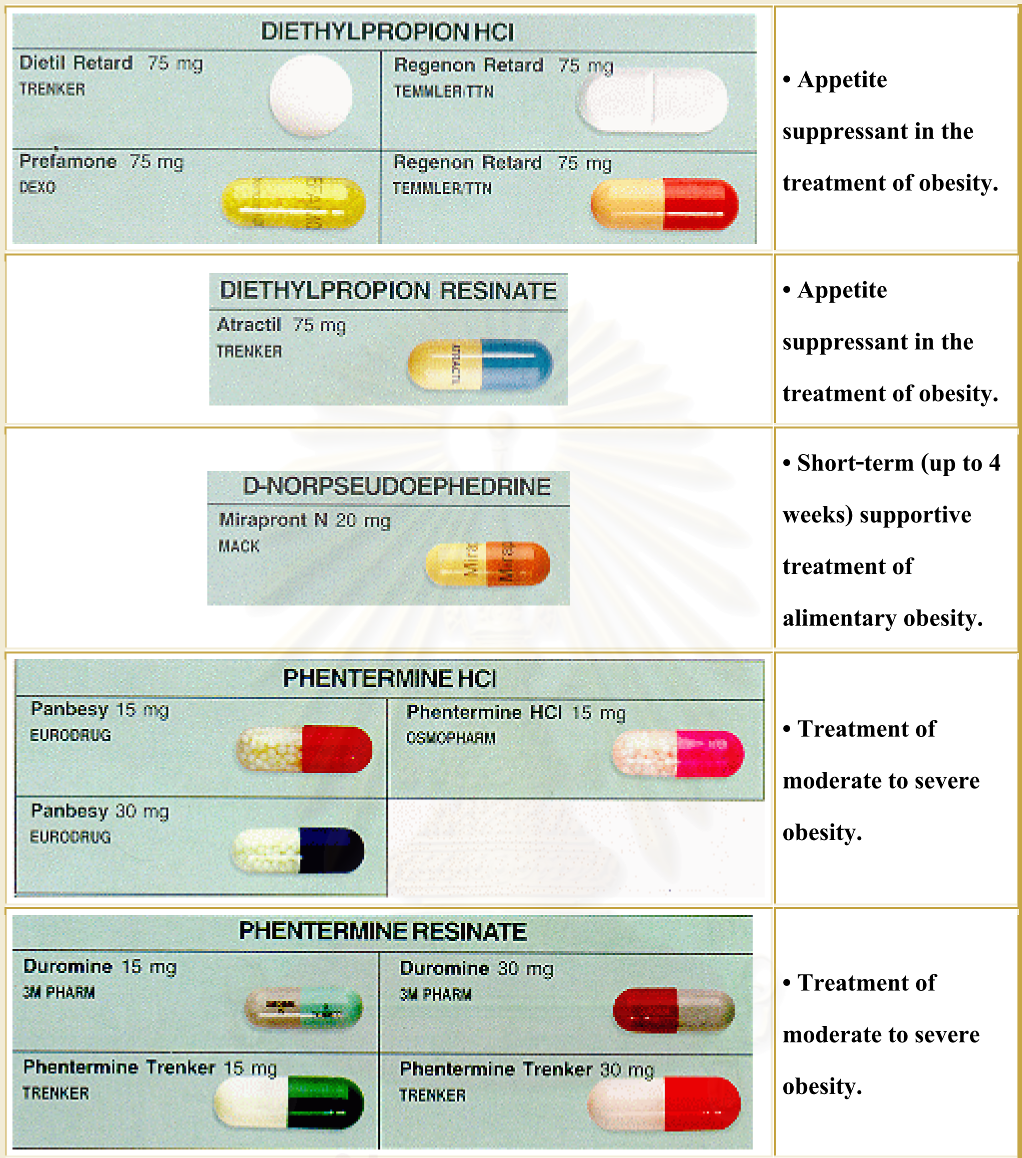
Figure1: Psychotropic substance schedule 2



(Thai FDA, 2002)

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APPENDIX B

In-depth interview guide

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In-depth interview guide for female adolescents who used anti-obesity drug

Number of the interviewee………………………..

Date………………………Time start:…………………..Time end:……………………

Place…………………… Number of record……………

General advice

- The interviewee will receive the explanation about the objective of the research.
- The interviewee will receive the explanation about the point, precedence, answering, and time to use in the interview.
- The in – depth interview question use the same form but the detail of the conversation may difference including the questions for another interviewee.
- Ask for the permission and give the reason to record the conversation.
- Give their confidence to make sure that all information would be the secret.

The questions are:

Demographic factor

1. General information of the women teenager

    1.1 Age………………..

    1.2 Weight (kilograms)……………………

    1.3 Height (centimeters)…………………

    1.4 Average income per month, Expense per month………………….

    1.5 Education…………………………………

    1.6 Occupation……………………………………

    1.7 History of heredity of the family……………………………….

Does any member in your family have the over weight or fat?

…………………………………………………………………………

…………………………………………………………………………

1.8 Health record

Do you have the personal disease? (Such as; heart attack, hypertension, and diabetes)

…………………………………………………………………………

…………………………………………………………………………

1.9 Lover

At the present, do you have lover? …………………………………

2. The experience or the record of reducing the weight

2.1 Have you ever reduced you weight? ……………………………….

2.2 What is the weight reducing method that you know?...

....

2.3 Which method have you ever used to reduce your weight (gives the example and explains) if they do not tell anything give them the method that ever used in Thailand and ask them the reason why they chose this method.

- Fasting……………………………………………………………
- Limiting food in each meal…………………………………….
- Physical exercise………………………………………………
- Physical exercise with diet……………………………………
- Vomiting…………………………………………………………

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- Smoking……………………………………………………
- Liposuction………………………………………………

Using anti-obesity drugs or reducing weight products

- Dietary supplement………………………………………
- Herb…………………………………………………………
- Laxative……………………………………………………
- Thyroid drug……………………………………………..
- Diuretic agent……………………………………………..
- Anti-hypnotic/Anti- depressant……………………………..
- Anti-obesity drug in the group of psychotropic substance

……………………………………………………………….

- The others…………………………………………………

2.4 Which method in your opinion that you think has the most efficiency?

………………………………………………………………………

………………………………………………………………………

3. The source of the information about the anti- obesity drug

3.1 Have you ever known about the information of anti- obesity drug?

if the answer is Yes ask: What information did you know?...

....

3.2 Source of the information

Where did you get the information about anti- obesity drug?

If they do not answer: give them the example

- Mass media such as television, radio, newspaper, journal, pamphlet, poster etc.
- Peers
- Family such as parents, brothers, sisters
- Lover
- Medical officer such as doctor, pharmacist, and nurse

3.3 In your opinion, which source of anti-obesity drug information which has the influence or impulse you to use drugs? Please explain……………………………………………………………

……………………………………………………………………

External factor

4. Sociocultural factor

- Social and community factor

How the people in your social and community think about fat person and good shape person?

……………………………………………………………………

……………………………………………………………………

Have people in the social and community ever criticized or teased about your current body and why?

……………………………………………………………………

……………………………………………………………………

- Familial factor

How the members in your family have an opinion about fat person and good shape person?

……………………………………………………………………

……………………………………………………………………

Have the members in your family ever blame or criticize about your current body?

……………………………………………………………………………

…………………………………………………………………………….

- Peers factor

How do your friends have an opinion about fat person and good shape person?

……………………………………………………………………………

……………………………………………………………………………

Have your friends ever criticized about your current body? How?

……………………………………………………………………………

……………………………………………………………………………

- Lover factor (In case of the interviewee have the lover)

How your lover does have an opinion about fat person and good shape person?

……………………………………………………………………………

……………………………………………………………………………

Have your lover ever criticized about your current body? How?

……………………………………………………………………………

……………………………………………………………………………

From factors of social and community, family, friends, lover how these factors have the opinion about your decision to using anti-obesity drugs? Agree/ Disagree/ Support/ Not support/ Why? (Explain)

……………………………………………………………………………

……………………………………………………………………………

Internal factor

5. Psychological factor

5.1 Perception and attitude toward their body image. The satisfaction of their shape or weight.

Measurement measures the body image by select nine cards each card have a picture of difference shape of women from the very thin card (No.1) to the very fat card (No.9). The interviewee selects the first card demonstrate their current body size and the second card demonstrate their ideal body size. Then evaluate the result by measure the body dysphoria from the difference between the current body size and ideal body size to measure their satisfaction in their shape.

Each process, researcher will ask for reason why they choose the picture and ask the related question.

Why are you choosing these two cards?

…………………………………………………………………………

…………………………………………………………………………

Asking about the perception toward BMI at the present time in what level. By selecting from very thin, thin, normal, fat, and very fat. Asking why do they choose this.

…………………………………………………………………………

………………………………………………………………………….

Do you satisfy in your current body? Why?

…………………………………………………………………………

…………………………………………………………………………

In your opinion what is the body that you satisfy and not satisfy? Explain

…………………………………………………………………………

…………………………………………………………………………

In your opinion which celebrity's shape is your favorite person? Why?

…………………………………………………………………………

…………………………………………………………………………

5.2 Perception and attitude between obesity and inferior complex.

How do you think about these opinions?

- Obese people always think that they are not accepted in the society………………………………………………………………

………………………………………………………………………..

- Obese people always loss the confidence to do activity with the others including to joining to the society………………………………………………………………

………………………………………………………………………..

Do you think that you are in these situations? Why?

……………………………………………………………………

……………………………………………………………………

5.3 Perception toward severity of obesity

Do you think obesity is dangerous? How?

…………………………………………………………………………

…………………………………………………………………………

5.4 Perception toward severity and dangerous of using the anti – obesity drugs

Do you think the usage of anti – obesity drug has the dangerous to you? (If they do not understand the question explain that to themselves/physical/mental/day life/ career/social)

…………………………………………………………………………

…………………………………………………………………………

Do you think you can tolerate the severity and harm of anti – obesity drug? How?

…………………………………………………………………………

…………………………………………………………………………

5.5 The tolerate of cost, and side effect from using the anti – obesity drug

How do you think about the price of anti – obesity drug?

…………………………………………………………………………

…………………………………………………………………………

If the price of anti-obesity drug which you using now are higher 10% will you still using them? How? Moreover, how many percent of the higher price that you think you can accept? Why?

…………………………………………………………………………

…………………………………………………………………………

Do you have any side effect from using anti – obesity drug? How? Can you tolerate these effects?

…………………………………………………………………………

…………………………………………………………………………

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Do you have the transaction cost from these curing? Moreover, do you think it have an effect to this curing?

…………………………………………………………………………

…………………………………………………………………………

5.6 Perception toward the benefit of using anti – obesity drug

In your opinion after calculate the benefit and the weakness of using anti – obesity drug, do you think these curing are good or efficiency? How?

…………………………………………………………………………

…………………………………………………………………………

6. Process of change

6.1 Consciousness Raising

From your data you used to use others methods to reduce your weight before using anti – obesity drug, have you ever studying or searching the information about the drugs such as the efficiency, the effect?

…………………………………………………………………………

…………………………………………………………………………

6.2 Environmental Reevaluation

In your opinion do you think the decision to use anti – obesity drug can affect the society? Such as; the economy in country.

…………………………………………………………………………

…………………………………………………………………………

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6.3 Social Liberation

Before you decide to using anti-obesity drug have you ever think the social accept the usage of anti – obesity drug? Explain

………………………………………………………………………

………………………………………………………………………

6.3 Self Reevaluation

If you decide to use anti-obesity drug to reduce your weight have you ever imagine your body after using those pills? Will you satisfy?

………………………………………………………………………

………………………………………………………………………

6.4 Stimulus Control

Have you ever use others methods before use the drugs to prevent your weight rising? (Such as open the refrigerator only when cooking or eating, avoid the bakery shop that you usually visit)

....

....

6.5 Counter Conditioning

Have you ever do substitution activity instead the activity which might make you fat? (Such as exercise instead eating snack or light meal)

………………………………………………………………………

………………………………………………………………………

6.6 Helping relationship

Have you ever ask or consult the others about usage of drug before you decide?

……………………………………………………………………

……………………………………………………………………

7. Behavior of anti – obesity drug usage.

- The name, type, and the location of the curing place………………..

- The reason why you decide to use anti – obesity drugs

…………………………………………………………………………

…………………………………………………………………………

The usage of anti – obesity drug

- Do you know the name of medicine, which the doctor prescribed?

…………………………………………………………………………

…………………………………………………………………………

- Type of your dose

…………………………………………………………………………

…………………………………………………………………………

- Your discipline in taking the drug (such as read the label)

…………………………………………………………………………

…………………………………………………………………………

- The frequency of the usage of the medicine (consistency in taking the pills at the clinics or the hospital)

…………………………………………………………………………

…………………………………………………………………………

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- Do you still using anti- obesity drugs after your weight has reduce at your satisfy level? Why?

…………………………………………………………………………

…………………………………………………………………………

- Do you have any side effect during using the drug? What? Moreover, if it occurs will you still using them?

…………………………………………………………………………

………………………………………………………………………..

- Do you think the medicine have efficiency? Why?

…………………………………………………………………………

…………………………………………………………………………

- Do you satisfy in your medicines? Why?

…………………………………………………………………………

…………………………………………………………………………

- Does doctor give you the explanations or advice about the usage of the medicines? How?

…………………………………………………………………………

…………………………………………………………………………

- Do you think the usage of medicines should in charge of the doctors? Why?

…………………………………………………………………………

…………………………………………………………………………

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The dialogue to asking for the research co-operation to the in – depth interview

The faculty of Pharmaceutical sciences, Chulalonkorn university has launch the scheme to study about the behavior and reasons behind anti – obesity drug usage among non – obese female adolescents in the Bangkok. This project is the master thesis of pharmacist Apichai Pojlertaroon. According to the problem of the usage of anti – obesity drug has increase rapidly, especially in the female adolescents who have the normal weight. That caused many problems, such as the side effect from the usage, the over dose of the drug. This research helps us clear about the reason, the behavior, and the beginning of the problems. This research can help the society see the overview and the basic of the problem. Moreover, it could be the fundamental study for the advance research in the future. This interview takes about 1-2 hours.

During the interview, we will record in the tapes and the documentary. We will not write or reference anything to you no matter your name, address, telephone number and if you would like to use the alias name we will give you the interview digit code.

We will talk with you about your usage behavior, reasons, and driving factor to make you decide to use anti-obesity drug. The information which we receive from you will improve the consumer protection work especially the usage of anti – obesity drug. Some questions which make you recent or inconveniently, you can deny to answers or quit these interviews.

This decision is depend on you. You have the right to refuse answer the question or quit the interview. If you have any question or suspicious please contact Assistant Professor Niyada Kieatyingaungsulee, Ph.D. or pharmacist Apichai Pojlertaroon at the faculty of pharmaceutical sciences, Chulalongkorn University 0-2218-8368 and 0-2218-8337

Do you have any question or suspicious?

Do you allow us to interview?

APPENDIX C

Method: Nine cards of women’ pictures in various sharp

by way of BMI from the least BMI (No.1) to the most BMI (No.9)

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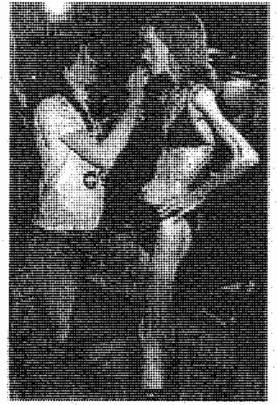


Card No.1

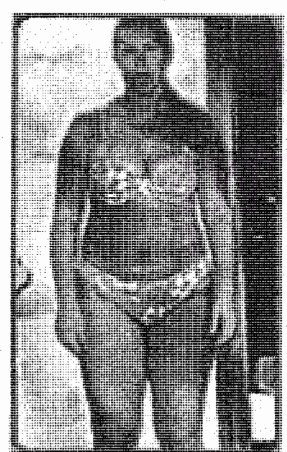
Card No.2

Card No.3

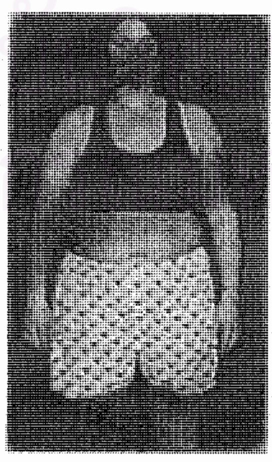
Card No.4

Card No.5

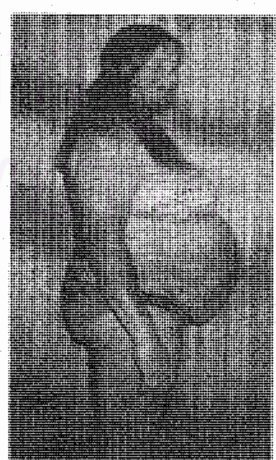
Card No.6



Card No.7



Card No.8



Card No.9

APPENDIX D

Demography of female adolescents

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Table 2: Demograpy of female adolescents

Female Adolesecent	Height	Weight	BMI	Age	Income	Expenditure	Education	Occupation	History of Heredity	History of Health	Lovers
1	155	55	22.92	25	7,000	7,000	bachelor	official	no	no	no
2	155	55	22.92	20	7,000	7,000	bachelor	study	no	no	no
3	150	49	21.78	25	10,000	8,000	vocational	employee	no	no	no
4	152	47	20.35	24	5,000	4,500	bachelor	study	no	no	no
5	160	57	22.27	25	19,000	9,000	diploma	official	no	allergy	have
6	155	55	22.92	22	10,000	7,000	bachelor	study	no	no	no
7	155	55	22.92	21	8,000	5,000	bachelor	official	no	no	no
8	170	60	20.76	25	7,000	5,000	bachelor	official	parents	no	no
9	157	55	22.36	21	10,000	6,000	bachelor	employee	brother	no	have
10	158	55	22	20	6,000	4,000	bachelor	employee	no	no	have
11	158	47	18.8	22	7,000	7,000	vocational	employee	female adolescent	no	no
12	158	50	20	22	40,000	15,000	bachelor	employee	no	allergy	no
13	153	47	20.09	20	5,000	3,000	bachelor	study	no	no	no
14	157	51	20.73	23	10,000	7,000	bachelor	employee	mother,brother	allergy	no
15	157	50	20.33	25	8,000	6,000	vocational	employee	female adolescent	no	no
16	160	57	22.27	25	8,000	5,000	diploma	official	female adolescent	no	no
17	158	55	22	25	14,000	8,000	bachelor	employee	no	no	no
18	159	54	21.34	23	15,000	8,000	bachelor	employee	no	no	have
19	156	52	21.4	23	20,000	9,000	bachelor	owner	father	no	have
20	157	52	21.14	25	18,000	9,000	diploma	employee	no	no	no

Female Adolesecent	Height	Weight	BMI	Age	Income	Expenditure	Education	Occupation	History of Heredity	History of Health	Lovers
21	158	53	21.2	25	10,000	7,000	diploma	employee	female adolescent	no	have
22	158	54	21.6	22	15,000	7,000	bachelor	owner	no	no	no
23	160	55	21.48	25	40,000	20,000	bachelor	owner	father	no	have
24	158	52	20.8	23	10,000	6,000	bachelor	employee	no	no	no
25	155	50	20.83	25	15,000	6,000	bachelor	official	brother	no	no
26	157	54	21.95	25	6,000	0	bachelor	owner	female adolescent	no	have
27	155	65	27.08	24	7,000	7,000	bachelor	official	all	high triglyceride	no
28	160	54	21.09	24	8,000	5,000	bachelor	official	no	no	have
29	155	65	27.08	25	10,000	8,000	bachelor	official	all	no	no
30	157	54	21.95	20	6,000	4,000	vocational	study	no	no	no
Average	157.10	53.8	21.812	23.30	12,033.33	6,983.33					
Standard deviation	3.40	4.33	1.73	1.86	8,652.22	3,514.71					
Max	170	65	27.08	25	40000	20000					
Min	150	47	18.8	20	5000	0					
Mode	155	55	-	25	10,000	7,000	bachelor	employee	no	no	no

Table 3: Range of income per month (Baht) and number of female adolescents

Income (Baht)	Number of female adolescents
5,000 – 9,999	14
10,000-14,999	8
15,000-19,999	5
20,000-24,999	1
≥ 25,000	2
Total	**30**

Table 4: Range of expenditure per month (Baht) and number of female adolescents

Expenditure(Baht)	Number of female adolescents
0-4,999	25
5,000-9,999	3
≥ 10,000	2
Total	**30**

APPENDIX E

The number of female adolescents in selecting 2 cards

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Table5: The number of female adolescents in selecting 2 cards: first card shows current body size and second card shows ideal body size

Female adolescent (No.)	First card (Current body size)	Second card (Ideal body size)	Body dysphoria
1	6	4	2
2	6	4	2
3	5	4	1
4	6	3	3
5	6	4	2
6	7	2	5
7	6	3	3
8	5	3	2
9	6	4	2
10	5	2	3
11	7	2	5
12	6	4	2
13	6	4	2
14	7	4	3
15	6	4	2
16	5	4	1
17	6	4	2
18	5	4	1
19	6	4	2
20	6	3	3
21	6	4	2
22	7	4	3
23	6	4	2
24	6	4	2
25	6	2	4
26	6	4	2
27	7	4	3
28	6	2	4
29	7	4	3
30	5	3	2
mean	**6**	**3.5**	**2.5**

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APPENDIX F

Code book

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CODE BOOK

A. The reason behind anti-obesity drug usage and demographic feature.

A1 Demographic feature

A1a	-	age
A1w	-	weight
A1h	-	height
A1b	-	body mass index
A1c	-	level of education
A1o	-	occupation
A1l	-	lover
A1hi	-	history of heredity
A1he	-	health history
A1r	-	experience and history of reducing weight

A1a: age

A1a20	-	20
A1a21	-	21
A1a22	-	22
A1a23	-	23
A1a24	-	24
A1a25	-	25

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A1w: weight

A1w47	-	47
A1w49	-	49
A1w50	-	50
A1w51	-	51
A1w52	-	52
A1w53	-	53
A1w54	-	54
A1w55	-	55
A1w57	-	57
A1w60	-	60
A1w65	-	65

A1h: height

A1h150	-	150
A1h152	-	152
A1h153	-	153
A1h155	-	155
A1h156	-	156
A1h157	-	157
A1h158	-	158
A1h159	-	159
A1h160	-	160
A1h170	-	170

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A1b: body mass index

A1b20	-	less than 20
A1b25	-	less than 25
A1b30	-	less than 30

Relationship between body mass index and nutrition status

A1bn	-	normal nutrition status
A1bo	-	over nutrition status

Relationship between body mass index and normal nutrition status in many aspects

A1bnc	-	relationship between body mass index and current Body size
A1bnd	-	relationship between body mass index and drug usage
A1bns	-	relationship between body mass index and Social stigma
A1bni	-	relationship between body mass index and Inferiority complex

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Relationship between body mass index and over nutrition status in many aspects

A1boc	-	relationship between body mass index and current Body size
A1bod	-	relationship between body mass index and drug usage
A1bos	-	relationship between body mass index and Social stigma
A1boi	-	relationship between body mass index and Inferiority complex

A1e: level of education

A1eb	-	bachelor degree
A1ed	-	diploma degree
A1ev	-	vocational education

A1o: occupation

A1oo	-	official
A1oe	-	employee
A1ob	-	business owner
A1os	-	studying

A1l: lover

A1lm	-	marriage
A1lh	-	have lover but not marriage
A1ls	-	single

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A1hi: history of heredity

A1hih	-	have history of heredity in over nutrition
A1hidh	-	do not have of heredity in over nutrition

A1he: health history

A1hen	-	no disease
A1heh	-	high triglyceride and cholesterol level

A1r: experience and history of reducing weight

A1ra	-	anti-obesity drug
A1rl	-	limiting food
A1rp	-	physical exercise
A1rf	-	fasting
A1rd	-	dietary supplement
A1rl	-	laxative
A1rh	-	herb
A1rb	-	bulimic

B. The behavior of anti-obesity drug usage

B1 The behavioral change in reducing weight

B1o	-	use other reducing weight methods before using anti-obesity drug
B1d	-	directly use anti-obesity drug

B1o use other reducing weight methods before using anti-obesity drug

B1ol	-	limiting food
B1oe	-	limiting food combine with physical exercise
B1of	-	failed from using these methods
B1os	-	know anti-obesity drug from closed friend who success from using it

B1d directly use anti-obesity drug

B1dcf	-	can not able to use fasting method
B1dcp	-	can not able to use physical exercise

B1dcf can not able to use fasting method

B1dcff	-	familial and social aspect

B1dcp can not able to use physical exercise

B1dcpl	-	lazy
B1dcps	-	not sport woman type
B1dcpt	-	not have enough time

B2 The reasons to decide using anti-obesity drug

B2m	-	the reason from their mind
B2c	-	the reason from social

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B2m The reason from their mind

B2mft	-	fat
B2msg	-	sluggish
B2msl	-	the other methods are slowly
B2mfl	-	fail from the other methods
B2mnco	-	can not control their mind
B2mli	-	not concentrate to limit the food
B2mbe	-	believe the friend
B2mfa	-	using anti - obesity drugs is faster
B2mfs	-	want to wear the fashion cloth
B2mv	-	want to vigorous
B2mbo	-	not satisfy their body image
B2mtr	-	want to try

B2c The reason from social

B2cs	-	see the success from their closed friends
B2cp	-	teasing from closed friends
B2cf	-	teasing from family
B2cl	-	teasing from lover

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B3 The usage of anti-obesity drug

B3p Place of reducing weight those female adolescent popularly visit

B3pdc	-	diet clinic
B3pph	-	private hospital

B3pdc Diet clinic

B3pdcr	-	Ramkhamheang road
B3pdcs	-	Sanambinnam road
B3pdcm	-	Maboonkrong center
B3pdcss	-	Siam square

B3pe Period of treatment

B3pe2d	-	2 - 4 days
B3pe7d	-	7 days
B3pe15d	-	15 days
B3pe1m	-	1 month
B3pe2m	-	2 month
B3pe4m	-	4 month
B3pe8m	-	8 month
B3pe2y	-	2 years

B3d The discipline of drug usage

B3ds	-	using drug seriously
B3dus	-	using drug unseriously

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B3c The continuity in drug usage

B3cc	-	using drug continuously
B3cuc	-	using drug uncontinuously

B3cc Using drug continuously

B3ccs	-	short period
B3ccst	-	satisfy with drug result

B3cuc Using drug uncontinuously

B3cucl	-	long period
B3cucnt	-	can not tolerate severe side effect
B3cucst	-	satisfied with their weight
B3cucust	-	unsatisfied with their weight

B3d In case of drug dosage

B3db	-	before meal
B3da	-	after meal; 3 - 4 times a day such as breakfast, lunch, dinner and before steep
B3d4	-	at 4 o'clock in the afternoon

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B3p The process of treatment

B3pr	-	register
B3pm	-	measure weight, height, and blood pressure
B3ps	-	see doctor
B3pd	-	doctor ask about weight that they need to lose
B3pr	-	receive drug

B3d In case of anti-obesity prescribing from doctor (type of drug prescribing)

B3dcd	-	anti-obesity drug in the group of psychotropic substance schedule 2 combine with laxative drug, thyroid drug, diuretic agent, and anti-hypnotic
B3dcdd	-	anti-obesity drug in the group of psychotropic substance schedule 2 combine with laxative drug, thyroid drug, diuretic agent, and anti-hypnotic including dietary supplement

B3a Advice from doctors

B3ag	-	give advice about the drugs
B3adg	-	do not give any advice about the drugs

B3cs Consistency in seeing doctor

B3css	-	see doctor every times
B3csds	-	do not see doctor every times
B3csso	-	see doctor sometimes such as time to change the medicine level or when haring side effect

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B3t Using anti-obesity drug together with other reducing weight methods

B3tal	-	using anti - obesity drugs in the group of psychotropic substance alone
B3tdd	-	using anti - obesity drugs in the group of psychotropic substance combine with other drugs such as laxative, thyroid drug, diuretic agent, anti - hypnotic, dietary supplement
B3tdl	-	using anti - obesity drugs together with limiting food
B3tdp	-	using anti - obesity drugs together with physical exercise

B3s Reason to stop using anti-obesity drug

B3ss	-	the side effect from the drugs
B3swh	-	Worse healthy
B3sa	-	afraid the side effect
B3swm	-	waist the money
B3sst	-	satisfy in their weight

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C. The reasons behind anti-obesity drug usage and psychological factor

C1 Perception toward obesity

C1sc		lack self - confident
C1dr	-	problem in dressing
C1mo	-	convenience in moving or feeling uncomfortable
C1uh	-	unhealthy
C1ug	-	ugly
C1ss	-	social stigma
C1inf	-	having inferiority complex of obesity
C1ass	-	problem in associate with others
C1op	-	lack opportunity in job and education

C2 Perception and attitude toward body image and body satisfaction

C2fc female adolescent in selecting first card

C2c5	-	5
C2c6	-	6
C2c7	-	7

C2sc female adolescent in selecting second card

C2sc2	-	2
C2sc3	-	3
C2sc4	-	4

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C2p Perception of female adolescent toward their current figure

C2pn	-	normal
C2pno	-	between normal and obese
C2po	-	obese
C2pvo	-	very obese

C2st Satisfaction with there current body size

C2stst	-	satisfaction
C2stdss	-	dissatisfaction

C2I Ideal figure (body) that female adolescents wish to have

C2Ic	-	have curve figure
C2Im	-	flat tummy with lean muscle
C2Ip	-	proper with the height and balance with the chest waist and hip
C2If	-	look very fit and lean
C2Is	-	Similar to supermodel

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E. Reason behind anti-obesity drug usage and social perception, attitude toward current body size of female adolescent

E1 Social attitude toward female adolescent current figure

E1f	-	Familial attitudes toward female adolescents
E1p	-	Peer attitudes toward female adolescents
E1l	-	Lover attitudes toward female adolescents
E1s	-	Social attitudes toward female adolescents

E1f Familial attitudes toward current figure of female adolescents

E1fn	-	normal
E1ff	-	look fat
E1fwg	-	Are you weight gain?
E1fnp	-	not proper with height and balance with the chest waist and hip

E1p Peer attitudes toward female adolescent

E1pn	-	normal
E1pf	-	look fat
E1pwg	-	Are you weight gain?
E1pnp	-	not proper with height and balance with the chest waist and hip

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E1s Social attitudes toward female adolescents

E1sn	-	normal
E1sf	-	look fat
E1swg	-	Are you weight gain?
E1snp	-	not proper with height and balance with the chest waist and hip

F. Reason behind anti-obesity drug usage and source of anti-obesity drug information

F1 Sources of anti - obesity drug information that encourage female adolescents to use anti - obesity drug

F1m	-	mass media such as poster, magazine (Messages from media)
F1p	-	peer aspect such as; friends (Good efficiency in friends)
F1f	-	family member suggested using
F1l	-	lover suggested using
F1h	-	health professional such as; doctors and pharmacist

G. Perception toward anti-obesity drug usage: perceived consequence of anti-obesity drug usage including drug efficacy and drug side effect

G1 Perception toward efficiency of anti - obesity drug

G1s Satisfy

Code		Description
G1sf	-	Faster than other methods such as limiting food, diet, exercise, and dietary supplement
G1sst	-	satisfied especially at first time or period of drug use
G1sid	-	Suitable for the indiscipline person from other methods
G1sc	-	worthy if compare with the cost

G1ns Not satisfy

Code		Description
G1ns	-	The efficiency of anti-obesity drug is decrease after first period of drug use

G2 Perception toward anti - obesity drug side effect

Before using

G2ba	-	accept that they have known before using the drugs - physical effect such as ; depression, sleep disturbance, weakness, dry mouth, GI - disturbance - mentality effect such as irritate, dispirit, can not concentrate - social effect such as mouth odor, body odor
G2bdk	-	do not know exactly in the syndrome

After using

G2aa	-	accept that they have known before using the drugs - physical effect such as ; depression, sleep disturbance, weakness, dry mouth, GI - disturbance - mentality effect such as irritate, dispirit, can not concentrate - social effect such as mouth odor, body odor
G2adk	-	do not know exactly in the syndrome
G2a	-	can tolerate side effect
G2a	-	can not tolerate side effect

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G3 Tolerance of cost ; drug price

G3c	-	cheap if compare with dietary supplement
G3ne	-	not expensive if compare with result
G3e	-	expensive but good result

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BIOGRAPHY

Mr. Apichai Pojlertaroon was born August 10, 1976 at Nakorn Pathom Province, Thailand. I congratulated from Bachelor of Pharmaceutical Sciences in Pharmaceutical Sciences, Chulalongkorn University in 1999. I was a graduate student in Master of Sciences in Social and Administrative Pharmacy at Chulalongkorn University in 2003. I worked at Saraburi Provincial of Public Health in 1999 to present.